

# Western Industry

December  
1957

Vol. XXII, No. 12

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as new power system scores  
many firsts . . . . p. 31**

**How to reduce  
transit damage  
to 0 and handling  
costs by 1/4 . . . p. 33**

**40 best  
manuals on  
bearings  
yours for the  
asking . . .  
p. 44**

**SPECIAL: Western chapters of  
five technical societies . . .  
starts on page 35**

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DECEMBER, 1957  
Vol. XXII, No. 12

### New Western plant power system scores many "firsts" . . . . . 31

This jet turbine system installed in a rubber plant features a "killing two birds with one stone" action.

### Four steps to safe, economical handling . . . . . 33

You can reduce handling damage to zero and slash one-quarter off costs by using this "Whaleback Pallet Van" system.

### Testing penetration up to 20 in. of steel . . . . . 34

This Western plant has installed a 24 million volt betatron, the only one of its kind West of the Mississippi.

### Western round-up of technical societies you can join . . . . . 35

Here are facts you need to join a Western chapter of a technical society designed to fit your needs. Included are chapters of:

- American Institute of Industrial Engineers
- American Material Handling Society
- American Institute of Plant Engineers
- Society for Advancement of Management
- Society of Industrial Packaging and Material Handling Engineers

### Todays best manuals on bearings . . . . . 44

Is your bearing library up to date? Here are 40 of today's best manuals on bearings . . . yours for the asking.

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The Essential Publication for Manufacturing Management in the New Industrial West



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WESTERN INDUSTRY—December 1957

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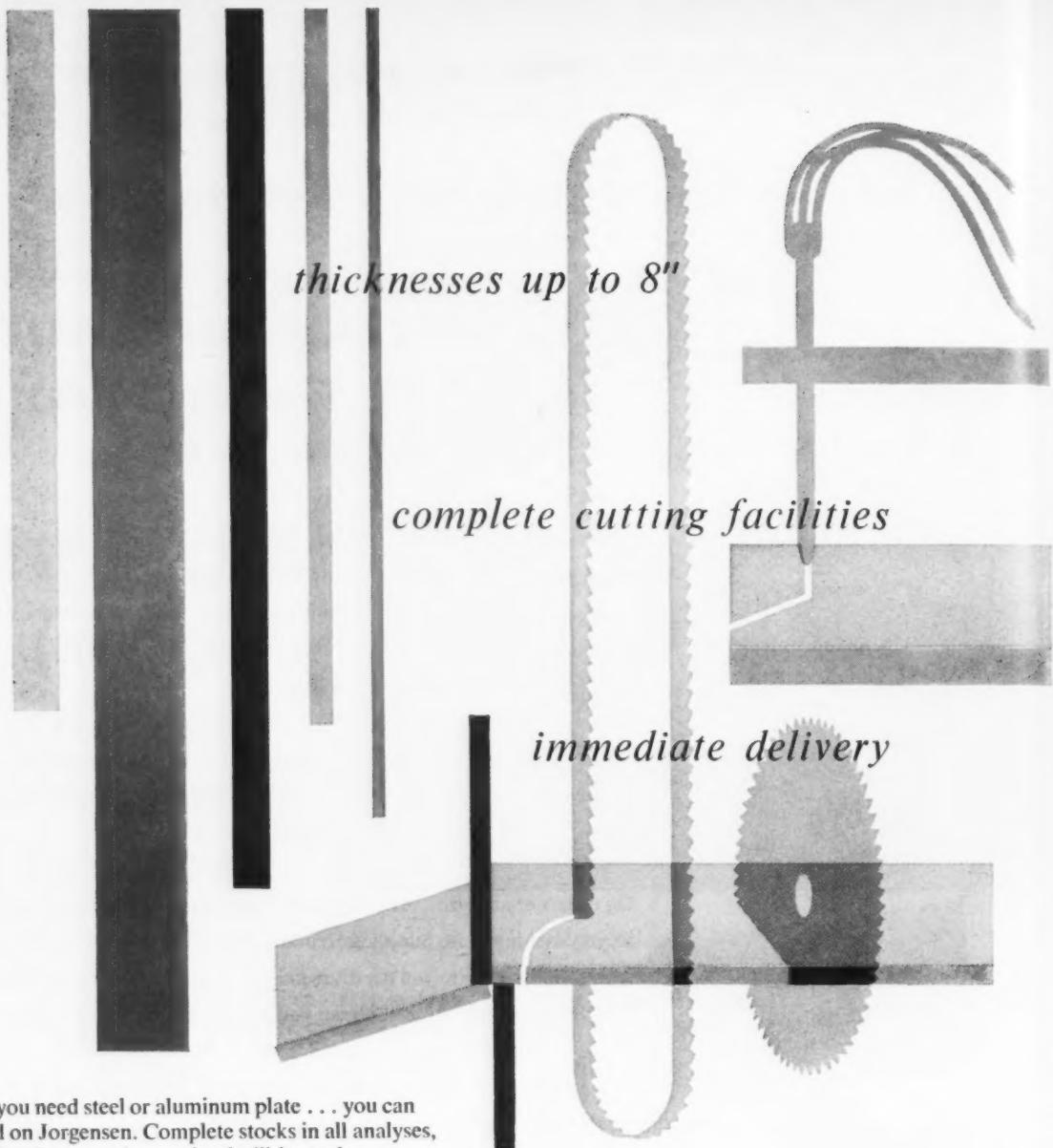
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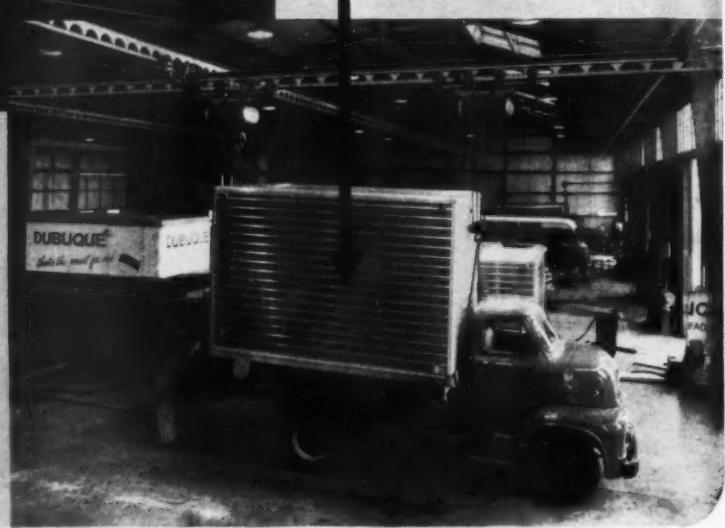
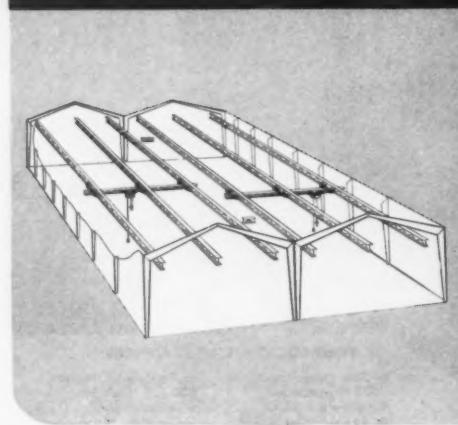
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# TRAMRAIL TRANSFER CRANES SPEED BODY WORK



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To Here

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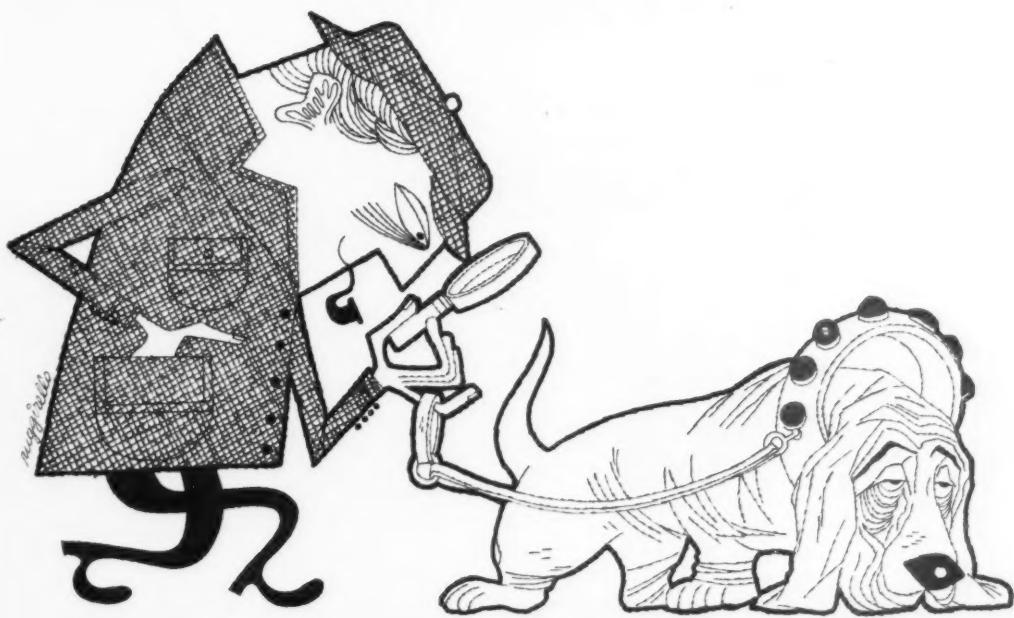


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**CLEVELAND TRAMRAIL**  
OVERHEAD MATERIALS HANDLING EQUIPMENT

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WESTERN INDUSTRY—December 1957

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The Republic Supply Company of California

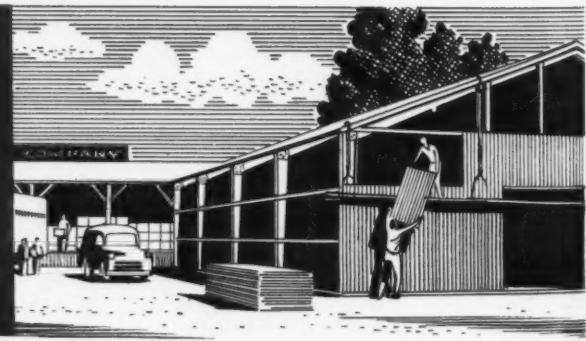
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WESTERN INDUSTRY—December 1957

11

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**HERE'S A GOOD WAY** to start the New Year:  
*Join the Western chapters of technical societies designed to fit your needs.*

These societies (some of which are described in our special section starting on p. 35) provide a clearing house of valuable data that will make your job easier and more enjoyable.

Through dinner meetings featuring guest speakers, and by field trips, forums, participation in conferences and exhibits, etc., you'll gain new insight into your field.

And, what is more enjoyable than spending an evening with the boys, with good fellowship, good food, and good talk on the menu?

To help you make your selection, we hope you'll look over our special section starting on p. 35.

We didn't have room to include all the Western chapters of societies in which you'll be interested, but we're sure there's a chapter of a technical society nearby that will suit your needs.

**OUR CONTRIBUTION** to making the New Year a good year will be forthcoming in our January issue.

In it, we will present 101 cost and time saving ideas that can be used in *your* plant. Sections will include (1) production equipment; (2) power and power transmission; (3) plant maintenance and equipment; (4) material handling.

We hope you'll study these 101 cost and time saving ideas and will glean some valuable tips from them.

**ALONG THESE LINES . . .** we hope you'll resolve during the New Year to use the pages of WESTERN INDUSTRY to "sound off" on any production problem you've solved . . . or want help in solving.

Thus, if you have come up with a good idea of how to reduce your costs and save time, why not tell us? The good news will reflect on the efficiency of your operations and the worthiness of your product.

And, if you have a production problem, we're sure we can find someone, or some plant, that has solved that problem. Maybe a similar article has appeared in a back issue of WESTERN INDUSTRY. If so, we'll send you tearsheets—at no cost to you. If we do not have the answer, we'll find it and let you know. Yes, a "letter to the editor" can pave the way to **cost** and **time** saving in your plant.

**SO WE'LL MAKE OUR NEW YEAR'S RESOLUTION** right now: To present to you the most up-to-date methods and ideas that can save you **time** and **money**!

You'll find these methods and ideas in our fact-packed articles, in our "Know-How Notebooks" (selected production and maintenance ideas for Western plant operating executives and our unique self-service library) and in our "Helpful Literature" and "New Equipment" sections.

Also, we will bring you *timely* and *exclusive* reports on the growing industrial West in our "West on its Way" and "Westerners at Work" sections. We're sure you'll not only find news of interest in these regular WI features, but invaluable information to help you plan and gear your production to the growing needs of the industrial West.

In addition, we have a few pleasant surprises in store for you . . . innovations that will put **money** in your pocket. *Watch for these bonanzas!*

And watch WESTERN INDUSTRY grow in size and scope as we keep pace with the expanding industrial West. We'll be right along with you, pardner, as the West booms into the largest and most important industrial area in the United States!



**POWER PACEMAKER AWARD**—Milt Laursen (left), chief industrial engineer, and Walter Kassebohm (right), executive vice president-operations of Marchant Calculators, Inc., Oakland, Calif., receive a **Western Power Equipment Pacemaker** award from WI editor Peter A. Dickinson. WI presented similar awards to True Trace Corp., AiResearch Mfg. Div. of Garrett Corp., Diamond Walnut Growers, Permanente Cement Co., Sundstrand-Denver, Line Material Industries, and Yale & Towne Mfg. Co. for installing outstanding power systems.

# Automatic

# DOCKER...THE LIFT TRUCK

## THAT WORKS WHERE OTHERS CAN'T



*Shortest in its class... unmatched for easy maneuvering...and for efficient low-cost operation*

This extra-compact, more maneuverable truck offers more advantages than any other of its type for materials handling in any industry. It is especially desirable where space is limited...works with ease inside trailers and in aisles, with or without pallet racks, too narrow for other similar trucks.

What's more, direct comparison shows clearly how definitely superior the DOCKER really is. Note the figures at right.

MAIL COUPON for complete specifications and FREE "COST-CUTTER" that shows how to chart and analyze your own materials handling needs.

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	DOCKER	TRUCK A	TRUCK B	TRUCK C
2000 LBS. WITH LOAD LENGTH OF	49"	30"	40"	30"
SHORTER..... OVERALL LENGTH LESS FORK	53 1/8"	65 1/8"	65 1/2"	64"
SAFER-EASY ON, EASY OFF..... STEP HEIGHT	7"	13"	13 1/4"	13 1/8"
MORE PRODUCTIVE..... LIFT SPEED F.P.M.	65	55	45	45
MORE VERSATILE..... GRADE CLEARANCE	45%	43.4%	45%	35%
MORE MANEUVERABLE... TURNING RADIUS	56"	59"	64"	57"
MAXIMUM HEAT PROTECTION. CLASS H, SILICONE INSULATED MOTORS—ALL MODELS	Yes	No	No	No

Automatic Transportation Company  
Dept. X-7 . . . 121 West 87th St., Chicago 20, Ill.

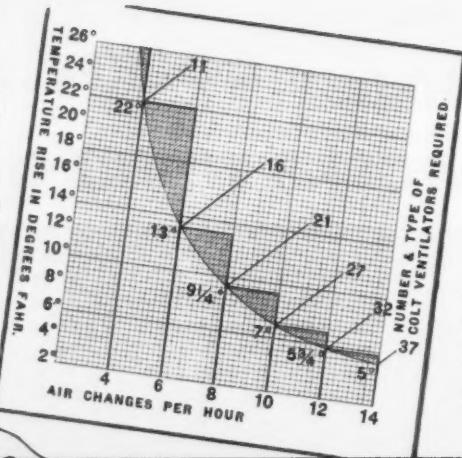
Please rush me complete specifications for Automatic DOCKER...also  
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This customized, *curved* chart shows at a glance the ventilation system that is *right* for your plant. Another Colt "first."



## COLT CLEARS THE AIR AT NARDON MANUFACTURING CO.

ALHAMBRA, CALIFORNIA

Pictured above are some of the 27 CO/2046 Colt Clear-Opening Adjustable Louver Ventilators installed in the sawtooth roof at Nardon Manufacturing Company. Installation was carried out without affecting working operations by simply removing panes of glass and inserting ventilators in their place.

The customized chart illustrated at top was used to determine the most efficient and economical number of ventilators to be used. Since each

building presents a different ventilation problem, Colt has devised its unique customized chart, based on theoretical calculations plus Colt's carefully kept records of more than 32,500 installations, to produce the most economical ventilation system and to show exactly what it will do in a building.

Don't settle for a hit or miss ventilation system! You know before you buy that you are getting your money's worth with Colt . . . and Colt has a wide range of ventilators to suit every need.



*Write for Free Technical Manual  
giving full details of  
the Colt System and equipment used.*

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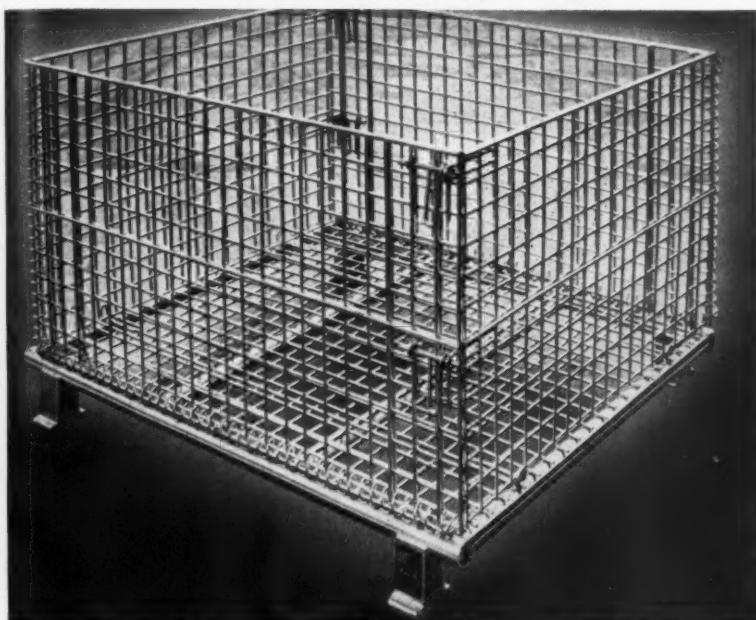
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WESTERN INDUSTRY—December 1957

# you save 3 ways with

**CF&I** *KARGO-PAL*  
TRADE MARK



Kargo-Pals are tough and durable. They are made of 2" mesh, 2 gage (.2625") Welded Wire fabric with O gage (.3065") reinforcing wires. They have a corrosion-resistant, baked aluminum finish.

Now many manufacturers can effect a substantial saving in time, space and handling costs by using CF&I's new KARGO-PALS. These pallet-type collapsible containers make it possible to handle 1- to 2-ton loads of materials or parts with a fork lift truck.

- **YOU SAVE TIME**—Trucks or box cars can be loaded and unloaded faster—production- operating- and inventory-time can be reduced—sub-assembly jobs speeded up.
- **YOU SAVE SPACE**—The reinforced, interlocking leg construction of Kargo-Pals permits easy stacking three or four high to save warehouse floor space.
- **YOU SAVE COSTS**—In addition to the savings in handling, storing and shipping costs, Kargo-Pals eliminate the replacement costs of broken crates, crushed drums and other out-moded containers. With Kargo-Pals maintenance bills are practically nil.

Get the complete details on time-saving, money-saving Kargo-Pals from your CF&I representative or write 1080 19th Ave., Oakland 6, California.



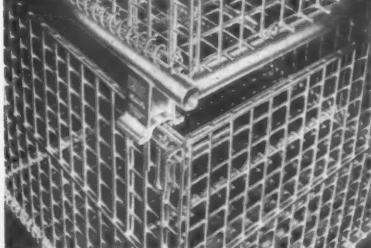
**K A R G O - P A L**

**THE COLORADO FUEL AND IRON CORPORATION**

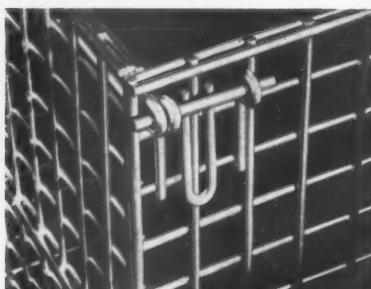
Albuquerque • Amarillo • Billings • Boise • Butte • Denver • El Paso • Ft. Worth • Houston • Lincoln (Neb.) • Los Angeles • Oakland • Oklahoma City • Phoenix • Portland • Pueblo • Salt Lake City • San Francisco • San Leandro • Seattle • Spokane • Wichita

5611

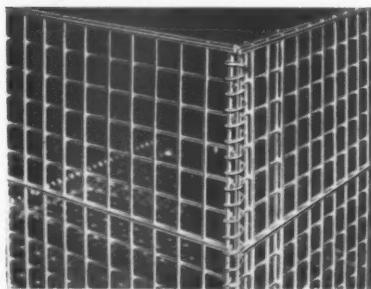
#### NOTE THESE SPECIAL KARGO-PAL FEATURES



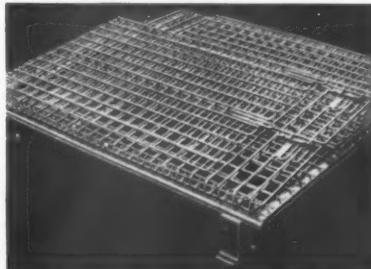
Cross-braced welded pipe base with reinforced leg construction permits safe, stable stacking ... easy pickup by fork lift truck.



Specially designed locks (two per side) automatically fall into locked position. Accidental opening is virtually impossible.



Strong steel helical hinges on two side and two bottom edges keep Kargo-Pals in perfect alignment and also provide easy folding features.



Kargo-Pals are one-piece units. When not in use they can be folded quickly and simply for compact storage or shipping.

... for more details, circle No. 12 on Reader Service Postcard

**Sales volume up . . .  
net profit down . . .**

**why not do something about it?**

**Cut material  
handling  
costs with  
**MOTO-  
TRUC****



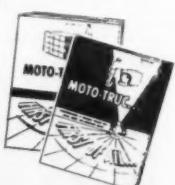
MOTO-TRUC will be one of the best investments you ever made. Modern, functional design and rugged dependability assure lowest operating costs. Small size and easy maneuverability enable MOTO-TRUCs to work efficiently in tight spots where larger trucks can't.

MOTO-TRUC builds only the rugged, powerful, quick moving "Walkie" and "small rider" trucks. Any business with material handling problems regardless of its size, needs MOTO-TRUCs.

MOTO-TRUCs' many exclusive and important features insure efficient and economical operation, and many, many years of faithful service.

Help to lick old man "overhead" by putting MOTO-TRUC on the job. Your local Dealer will give you full details. He'll be glad to help you solve your material handling problems.

We'll be glad to send you catalog No. 56W Walkie Trucks and No. 56R Rider Trucks upon request.



**Builders Of The First Walkie Truck**



**The MOTO-TRUC Co.**

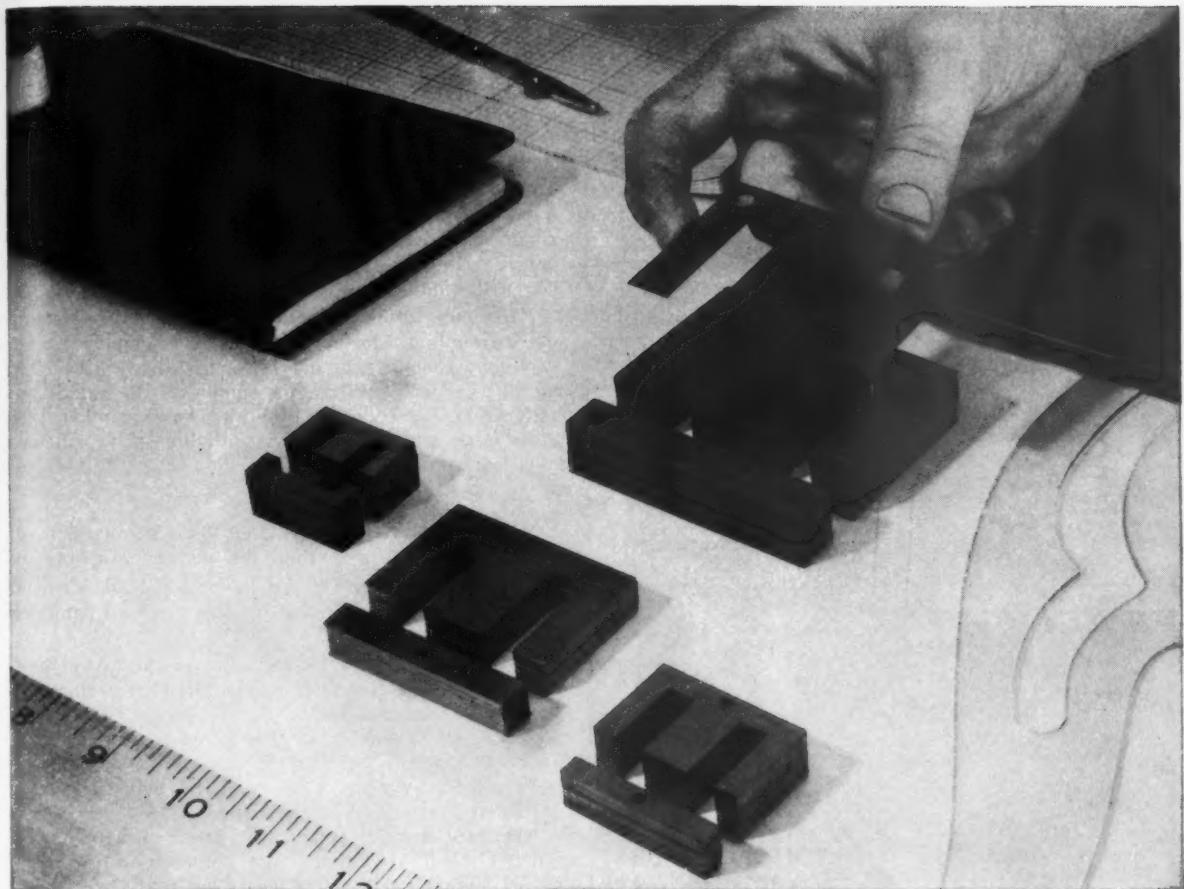
Representatives in Principal Cities

1963 E. 59th St., Cleveland 3, Ohio

Pallet . . . Platform . . . Hi-Lift Truck

... for more details, circle No. 13 on Reader Service Postcard

WESTERN INDUSTRY—December 1957



## Made on the coast... Silicon Laminations that give you the utmost in performance



### WRITE FOR THE REPATH CATALOG

This 54 page booklet contains complete specifications and detailed drawings of all standard Repath nickel-iron and silicon-steel laminations. Also illustrates line of stamped metal components for electronics.

ADDRESS DEPT. WI-712R

Repath's more than 25 years of experience in metal fabrication for the electronics industry is your best assurance of top quality silicon steel laminations—laminations that meet *all* your requirements for uniformity and performance.

Repath electrical laminations are precision produced on the finest equipment available. Complete service—engineering, design, die making, annealing, and inspection—is applied to every job to insure the utmost in magnetic properties and conformance to all standard tolerances.

Large stocks of standard shapes are available for immediate delivery. Special requirements receive complete attention and service. Let Repath help you with any problems you may have.

WSW 6876

**REPATH PACIFIC DIVISION**  
641 EAST 61st STREET, LOS ANGELES, CALIFORNIA



**THE ARNOLD ENGINEERING COMPANY**  
MAIN OFFICE & PLANT: MARENGO, ILLINOIS  
Los Angeles District Sales Office: 3450 Wilshire Blvd.

... for more details, circle No. 14 on Reader Service Postcard

# MAKING NEWS wherever used . . .



## TOLEDO No. 78

Power Drive takes the toil out of threading, reaming or cutting. Put  $\frac{1}{2}$ " to 2" pipe in the wrenchless chuck, finger tighten, turn the switch. With a

TOLEDO Drop Head Ratchet Threader, your threading jobs are turned out in seconds!



## TOLEDO No. 68

Power Drive is a real "bear" for work, a worm and ring gear assembly powered by a  $\frac{1}{2}$  HP reversible motor, housed in a light-weight frame. The No. 68 will thread, cut, hoist, crank, pull, winch anywhere.

(Weights only 33 lb.)

BUILDERS OF THE WORLD'S FINEST PIPE TOOLS  
**TOLEDO**  
PIPE THREADERS • PIPE WRENCHES • PIPE MACHINES



TOLEDO Heavy Duty drop-forged aluminum pipe wrenches are virtually as strong as steel -- but weigh just half as much! All popular sizes. Unconditionally guaranteed, absolutely safe to use.

Toledo No. 22 Pipe Vise is built for rugged service -- weighs only 12 lb. Yoke mounts quickly for right or left hand use. Acme threads and hardened steel jaws.  $\frac{1}{8}$ " to 2 $\frac{1}{2}$ " and  $\frac{1}{8}$ " to 4 $\frac{1}{2}$ ".

**T** Quality Checked



**THE TOLEDO PIPE THREADING MACHINE CO.**

TOLEDO 4, OHIO

... for more details, circle No. 15 on Reader Service Postcard

20

## LABOR NOTES for the WEST

"THE FIRST RULE OF YOUR LABOR POLICY" is the title of an item in a recent "Weekly Letter" published by the Industrial Relations Council of Utah. It's worth quoting:

"Too many employer labor policies are built entirely around the union. In many cases the employer establishes a policy which recognizes the union and many of its rights and privileges on a mistaken theory that the union will in some way appreciate this and voluntarily reciprocate with kindness toward the company.

"The very nature of the union prevents its leaders from much friendliness to the employer. If an employer wants good labor relations, he had better first direct his policies and his efforts towards his employees as individuals, rather than as a collective group known as a union. If he deals fairly with his people as individuals, he will have a lot less trouble with their union."

•  
YOUR KIDS MAY HAVE AN IDEA OR TWO that is worth having. So listen next time the youngster spouts off.

The Phoenix plant of the Reynolds Metals Co. conducted a safety slogan contest among sons and daughters of the employees.

Prize slogans were posted all over the big plant to remind employees that their own children are urging them to be more careful at work.

Among prize-winning slogans were:

"Looked Down—Cracked His Crown"

"Think for Two—the Other Man and You"

"Safety Starts Between the Ears"

Not bad. And the plant was awarded the National Safety Council's Award of Honor, highest industrial award of the Council, for its safety record last year.

•  
WHAT ARE THE MANPOWER REQUIREMENTS for your industry? Your area? Where can you find the best help?

If you don't know the answers, you can probably find out at your State Employment Service, the local field office of the U. S. Department of Commerce and the Department of Labor.

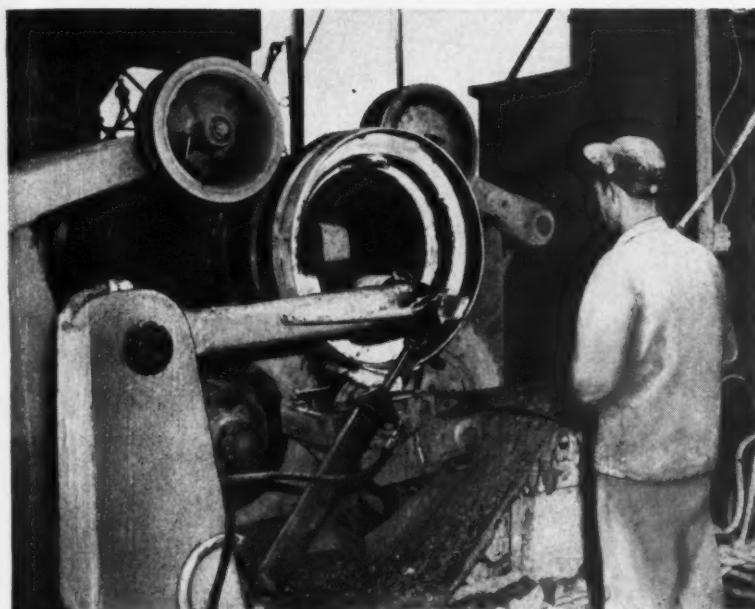
Several good reports have recently been published—Some of these are: "Manpower Requirement and Training Needs Study—Phoenix Labor Market Area" (available through the Arizona State Employment Service) and a series of reports issued by both the Department of Commerce and Labor on latest trends in labor and industrial development in specific areas. Check the field offices for a list of publications available.

### PROFIT SHARING—

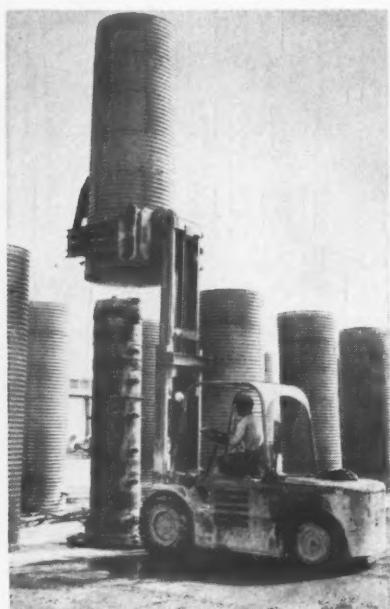
F. J. Robbins, president of Sierra Drawn Steel Corp., congratulates Moses M. Armstrong who received an annuity policy worth \$3,982 earned under a profit sharing program instituted by Sierra five years ago at its Los Angeles and Seattle plants.



## Hydraulic systems rust-free after 2 years



**Using Chevron OC Turbine Oil**, the 15 hydraulic cylinders controlling this CEN-VI-RO Concrete pipe machine (above) show no sign of rust or pitting after two years' tough service. Utah Concrete Pipe Co. produces high-strength pipe in diameters up to 48" with this centrifugal-vibration-rolling machine—turns out 50, 10-foot lengths daily. Individual lengths weigh up to 8,400 lbs. While mold rotates, hydraulic cylinders using Chevron OC Turbine Oil (formerly Calol) hold mold against driving wheels, force concrete mixture around reinforcing rods, vibrate mold to compact concrete.



**Specially Rigged Trucks** simplify handling of heavy pipe, molds, and steel jackets used for steam-curing. Combined weight of pipe and mold often exceeds 7 tons. Model 80 Hyster (above) has had no hydraulic system trouble in over 5,000 hours operation using Chevron OC Turbine Oil. All firm's trucks use this hydraulic fluid.



**Plant Supervisor Dick Davis**, points to one of machine's hydraulically operated eccentric vibrator wheels. "We're well satisfied with the performance of Chevron OC Turbine Oil," reports Mr. Davis. "In both our pipe machines and our fork trucks it's kept hydraulic cylinders working smoothly and reliably in spite of the heavy loads, grit, and moisture in our type of operation."



TRADEMARK "CHEVRON" AND CHEVRON DESIGN R.G. U.S. PAT. OFF.



- Contains effective oxidation inhibitor—will not deteriorate and plug lines or retard action of cylinders.
- Corrosion inhibitor stops rusting and pitting—has high metal-wetting ability.
- Separates readily from water or other contaminants.

For More Information contact your Standard Engineer or Representative, or write 225 Bush St., San Francisco 20, California.

**STANDARD OIL COMPANY OF CALIFORNIA**

... for more details, circle No. 16 on Reader Service Postcard



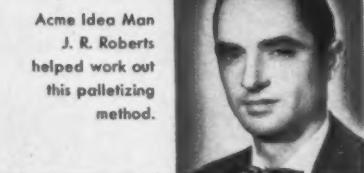
Work with your AIM\*... American Home Foods does...

## Acme Steel Strapping palletizes No. 10 cans

**American Home Foods Division of American Home Products Corporation**, Oakland, California, protects inter-plant cross-country shipments of raw materials for quality food products with a new palletizing technique. Working with their Acme Idea Man, a method was developed in which 336 No. 10 cans (56 cases) are palletized into a tight, secure pack that materially cuts handling and shipping costs and in-transit damage (Idea No. S3-30).

With this new method cans are individually handled only once from shipper to consignee, and individual case costs have been cut 50 per cent. Palletized cans are quickly handled by lift truck, and permit a freight car to be loaded in only half the time required in hand loading. Lading damage in transit has dropped to a negligible point, as proved by records of over 360 carloads shipped.

\*Work with your **Acme Idea Man** to improve your product protection methods. Find him under "Steel Strapping" in the yellow pages. Or write Dept. WCS-127, Acme Steel Products Division, Acme Steel Company, 4901 Pacific Blvd., Los Angeles 58, California. Also San Francisco, Seattle, Portland.



Acme Idea Man  
J. R. Roberts  
helped work out  
this palletizing  
method.

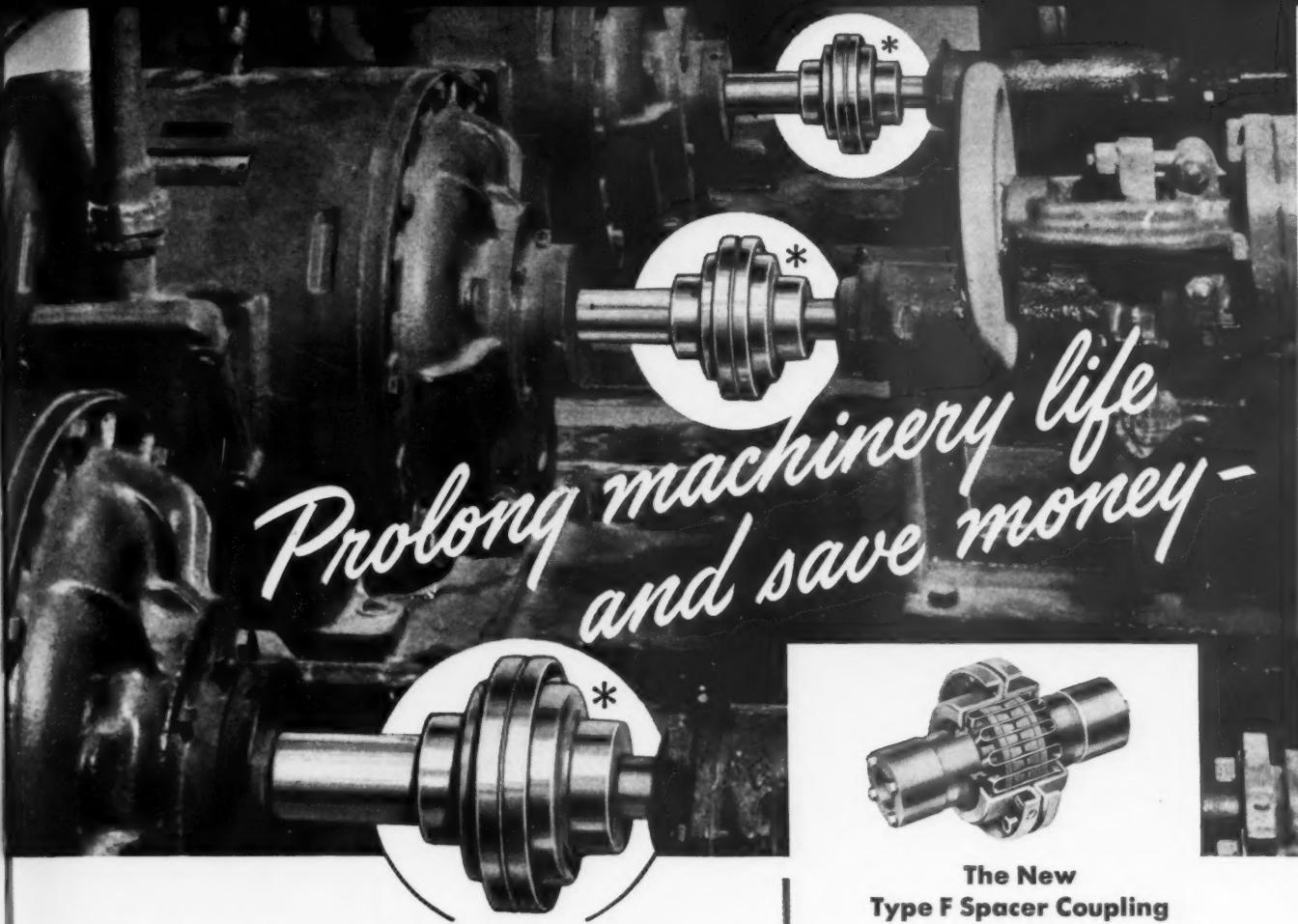


# STEEL STRAPPING

... for more details, circle No. 17 on Reader Service Postcard

WESTERN INDUSTRY—December 1957

... for more details, adv. opp. pg., circle No. 18 on Reader Service Postcard ➤



*Prolong machinery life  
and save money-*

## with FALK Steelflex Couplings

Ever since the first Falk Steelflex Coupling was designed and built, we have firmly held to these beliefs:

1. A coupling, to give fullest value, must do more than merely connect driving and driven machinery—it must *protect* the machinery and prolong its life.
2. A coupling, to be truly flexible, must overcome the effects of shock and vibration, as well as shaft misalignment.

Proof of the soundness of those beliefs is furnished by the record. More than one million Falk Steelflex Couplings have been used on every conceivable type of industrial application . . . giving trouble-free service, providing maximum protection to connected machinery.

\* A single basic type—the famous Type F—fills 90% of all industrial application needs. It is versatile, efficient and economical. And—it is always available from factory, field or distributor stocks, in a wide range of sizes.

**Write to Department 247** for engineering bulletin, including selection and dimension tables.

**THE FALK CORPORATION, MILWAUKEE, WISCONSIN**

**MANUFACTURERS OF:**

• Motoreducers	• Single Helical Gears
• Speed Reducers	• Herringbone Gears
• Flexible Couplings	• Marine Drives
• Shaft Mounted Drives	• Steel Castings
• High Speed Drives	• Weldments
• Special Gear Drives	• Contract Machining

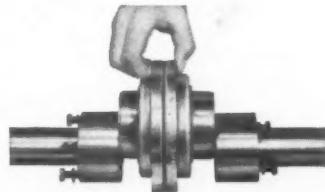
**FALK** ...a good name in industry

### The New Type F Spacer Coupling

Here is a Steelflex coupling specially designed to permit fast, easy installation and removal in horizontal and vertical applications where it is impracticable to move the connected units—or where a space-gap (up to 12 in.) is necessary.

Like all Steelflex couplings, the Type F Spacer gives long, trouble-free service and maximum 3-way protection for connected machinery: it provides torsional resilience to reduce shock and vibration; it accommodates parallel or angular shaft misalignment; it allows free (or limited) end float.

An outstanding feature of the Steelflex Spacer is that it can be installed or removed in one piece (see photo below); no dismantling or servicing of the coupling is required. Pump assemblies can be disconnected and removed without disassembling the coupling, without exposing working parts.



The Steelflex Spacer coupling is prelubricated at the Factory and can be installed, or removed and reinstalled, without disturbing the lubricant—a highly desirable feature.

# GENERAL ELECTRIC "CONTAINERIZES" scrap and waste as they accumulate...



Rome, Ga. Plant  
"Containerizes"  
Scrap and Waste  
at Accumulation  
Points...One Man, One  
Dempster-Dumpster  
Serve 36 Containers

## Dempster-Dumpster Disposal System Serves Today's Industrial Leaders....

Industrial waste disposal has passed the day of manual shoveling, rehandling, shaky bins, wheelbarrows or cumbersome carts. General Electric and other leaders "Containerize" waste when and where it originates by using clean, big capacity, Dempster-Dumpster Containers. Tremendous savings in disposal costs are made with the one-man, one-truck Dempster-Dumpster which can service over a hundred accumulation points, picking up, hauling and emptying containers on a planned shuttle schedule.

Savings are so great that thousands of users, large and small have amortized their equipment investments in 18 months or less. If you are now using costly conventional methods of handling rubbish, waste and scrap in your plant, it will pay you to send for the free booklet below.

FREE: Write Today for Your Copy of  
"How to Reduce Waste Disposal Costs."

DEMPSSTER BROTHERS, Knoxville 17, Tenn., Dept. WI-12

To: Dempster Brothers, Dept. WI-12  
Knoxville, Tennessee

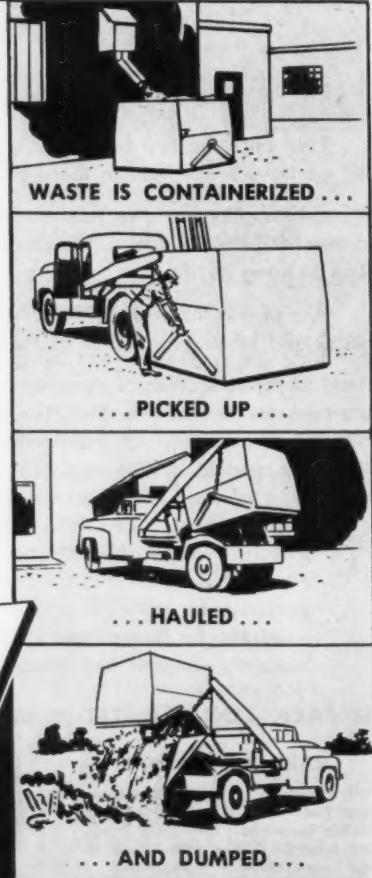
Please Send Without Obligation Your Booklet,  
"How to Reduce Waste Disposal Costs."

NAME ..... TITLE .....

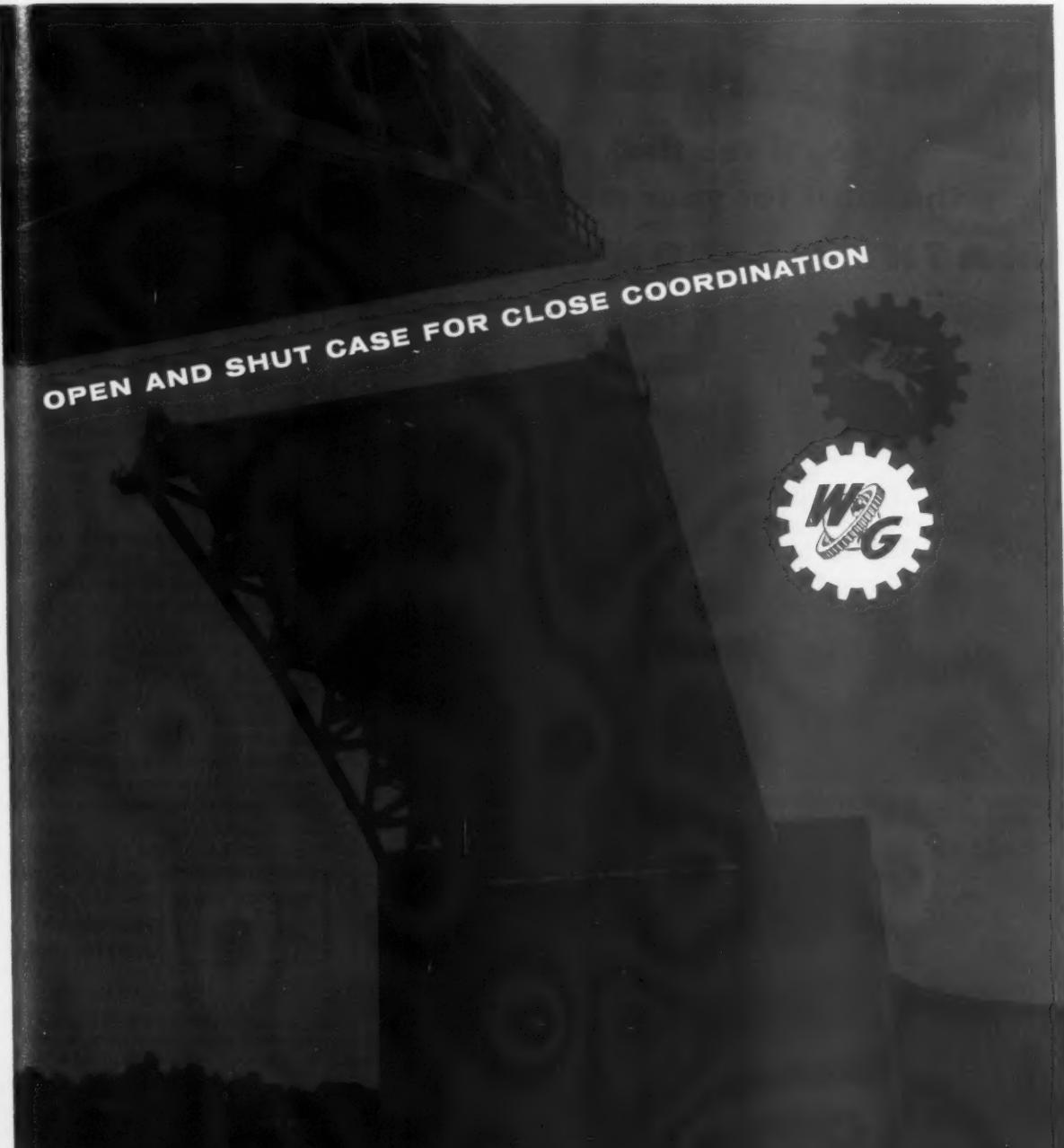
COMPANY .....

ADDRESS .....

CITY ..... STATE .....



... for more details, circle No. 19 on Reader Service Postcard  
WESTERN INDUSTRY—December 1957



OPEN AND SHUT CASE FOR CLOSE COORDINATION



There's a lot of coordination needed when a major project is in the building stage. Take Seattle's First Avenue South Bridge which covers 150 feet of water at a height of 53 feet. This important job was completed in 1956.

Western Gear Corporation supplied four "triple reduction right angle drives" to raise and lower the two bridge sections. For several years, General Petroleum has been supplying Western Gear with lubricants. From the very beginning... at the blueprint stage, G.P.'s

industrial engineers teamed up with Western's staff to develop the best possible lubricants for this "basalt double-leaf type" bridge.

This is another example how General Petroleum's Industrial Representatives work closely with their clients to provide the best available information and products to solve lubricant problems. Next time you need industrial lubrication solutions, call your nearest General Petroleum office.

GENERAL PETROLEUM CORPORATION

... for more details, circle No. 20 on Reader Service Postcard

look beyond the price...

**you'll see that you get  
the most for your money in**

## **MATHEWS CONVEYERS**



A push button order filling system in which an operator at a control console directs the flow of material from 66 storage lines. Photo courtesy of Galla Sales Co.

Most plant operating people, when they buy conveying systems, are looking for the equipment that is best for their plant—equipment that is designed to meet their individual requirements. They are looking beyond the price . . . looking to quality—to dependability. Mathews engineers have been designing and building conveying systems for over 50 years, and a great amount of this equipment has been applied in metalworking plants. This is why operating people everywhere have an extra measure of confidence in Mathews equipment—and why you see Mathews Conveyers in metal-producing and fabricating plants everywhere.

### **MATHEWS CONVEYER COMPANY WEST COAST SAN CARLOS, CALIFORNIA**

LOS ANGELES • PORTLAND • SEATTLE • DENVER • FORT WORTH  
DALLAS • HOUSTON • EL PASO • HONOLULU, T. H. • SALT LAKE CITY



# **MATHEWS**

*Fifty Years of Leadership in Mechanized Handling*

... for more details, circle No. 21 on Reader Service Postcard

### **WESTERN MEETINGS**

**AN ACTIVE MATERIAL HANDLING** chapter is setting a fast pace in the Vancouver, British Columbia, area.

This chapter is organizing a Material Handling Equipment Exposition under the direction of **Len Robertis** of Allan Equipment & Dist. Ltd.

Also, the chapter is making up a directory card giving the size and markings of pallets in the Vancouver area. Over 160 users in the Vancouver area are listed. **Bill Jackson** of G. H. Cottrell, Ltd., is chairman of the pallet committee.

Job Instruction Training programs for supervisory personnel is another activity of this chapter. The training is available to industry in British Columbia through **Roy E. Evans**, Dept. of Education, 701 Vancouver Block, Vancouver.

**THE DECEMBER MEETING** of the Albuquerque Area Chapter of the American Institute of Industrial Engineers will feature a talk by **Louis A. Selogie**, University of California (L. A.), on the subject of "Statistical Methods in Industrial Engineering."

The meeting will take place at 7:30 p.m. on Monday, Dec. 16, in Room 201, Electrical Engineering Bldg., at the University of New Mexico. Mr. Selogie will show films and will distribute literature covering the subject.

### **WESTERN MEETINGS**

**you should  
plan to attend**

#### **1958**

**Feb. 6-7—GOVERNOR'S INDUSTRIAL SAFETY CONFERENCE**, eighth annual California state-wide meeting, Fairmont Hotel, San Francisco. Further information may be obtained from H. A. Hartman, staff consultant, manufacturing section, 965 Mission Street, San Francisco, Calif.

**March 17-21—NATIONAL ASSOCIATION OF CORROSION ENGINEERS**, 14th annual conference, San Francisco. Contact A. B. Campbell, executive secretary, 1061 M & M Building, Houston 2, Texas.

**March 27-29—ELECTRICAL MAINTENANCE CONFERENCE**, combined show and conference, at the Shrine Exposition Hall, Los Angeles. Emphasis on automation and electronics. For further information contact Fred J. Tabery, 3443 So. Hill Street, Los Angeles.

**April 12-17—AMERICAN CHEMICAL SOCIETY**, California section will sponsor third Pacific Chemical Exposition in San Francisco. For further information contact Connolly & Leopold, exposition management, Hotel Sheraton-McAlpin, New York 1, N. Y.

**APRIL 15, 16—NORTHWEST WOOD PRODUCTS CLINIC**, thirteenth annual meeting, Davenport Hotel, Spokane. Joint meeting with Inland Empire Section of Forest Products Research Society.

# COLD HEADING: A WAY TO CUT UNIT COSTS



• Eliminates extra operations; faster than forging

• Metal flows to shape—without waste, without machining costs

Here's a manufacturing fact often overlooked: The same machines that spill out large volumes of standard fasteners at surprisingly low cost can also produce special mechanical parts... also in volume and also at low cost.

It's surprising what an *expert* can do with cold heading machines. Some parts that would otherwise be two or more pieces are turned out as uniform, integral units. Parts that would otherwise require slower, costlier machining spout from the cold header with little or no scrap loss. What's more, the pieces are stronger.

**Case Histories:** (1) Eliminating double forging operation, high speed cold heading machine cuts and bends lengths from continuous rod to form shifter lever. It also gives greater strength, improved finish, closer tolerances. (2) Instead of a machined screw

assembled with separate stamped screw driver shield, hose clamp screw is now cold headed in one piece. (3) No longer cut on screw machine, insert screw for plastics costs 40% less. Cold header uses just amount of metal required.

Call on the RB&W Fastener Man. He can tell you whether or not cold heading is feasible for producing your screw machine parts, forgings and small assemblies. If so, RB&W facilities can handle your volume needs. Russell, Burdsall & Ward Bolt and Nut Company, P. O. Box 3336—Terminal Annex, Los Angeles 54, California.

**RB&W**  
112th year  
SERVING THE WEST  
FROM THE WEST  
Plants at: Los Angeles, Calif.; Rock Falls, Ill.; Coraopolis, Pa.; Port Chester, N.Y. Additional sales offices at: San Francisco; Dallas; Chicago; Detroit; Pittsburgh; Ardmore (Phila.), Pa. Sales agents at: Denver; Fargo; New Orleans; Milwaukee. Distributors from coast to coast.

**RB&W FASTENERS—STRONG POINT OF ANY ASSEMBLY**

...for more details, circle No. 22 on Reader Service Postcard



## Spin-Lock Screws Eliminate Washers

Ratchet action teeth on Spin-Lock Screws bite into the seat of any surface the screw is driven into. Their tight hold requires about 20 per cent more torque to loosen than to tighten. With this strong grip, separate washers or other locking devices are unnecessary. One-piece Spin-Lock construction gives faster assembly, lowers inventory needs—and affords fasteners that will stay tight in products subjected to vibration or repeated heating and cooling. Send for bulletin.

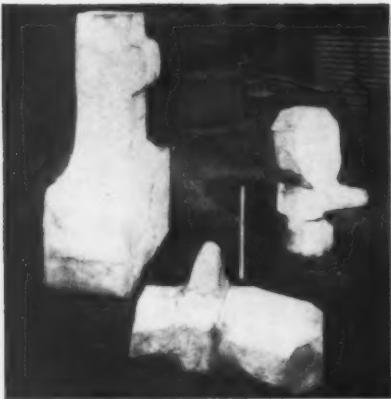
## 12-point fasteners cut wrench clearance space



Double hex RB&W bolts and nuts measure smaller across their points than single hex fasteners. Used with an external socket wrench, they permit optimum driving torque to be applied.

Thus, while fitting cramped spaces in compact assemblies, these fasteners also assure proper pre-loading for stronger connections.

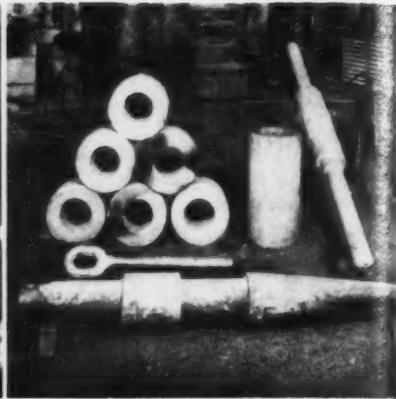
Available with plain flange, or SPIN-LOCK design.



Aircraft quality forgings



Miscellaneous commercial



Sleeves, shafts, and spindles

Serving the Leaders in Metalworking . . .

## QUALITY FORGINGS

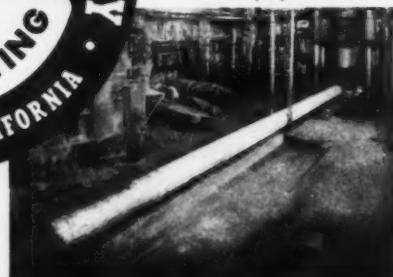
by Moore Dry Dock

COMMERCIAL  
AIRCRAFT  
MARINE

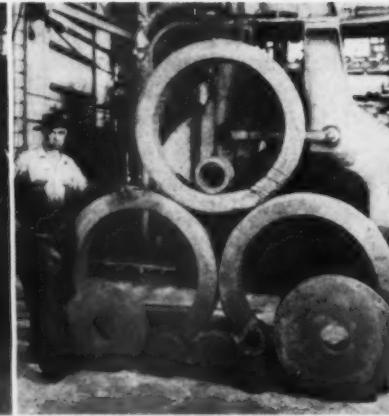
Flat die hammers with 800 to 6,000 lb. capacity and presses to 1,500 tons can produce a wide range of stronger, neater forgings to suit your particular requirements. Complete, modern equipment for heat treating, machining, and testing provides full "one shop" service and responsibility, speeds your job. Let us estimate your next outside work.



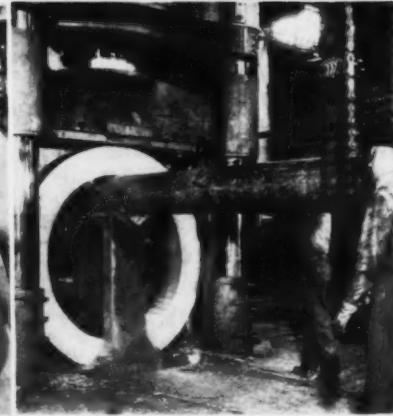
Steel mill eccentric shaft  
53' long,  
18" dia. propeller shaft



Crane hooks



Ring and gear blanks



Large mandrelled ring

Southern California Representative

**SHULTZ STEEL  
COMPANY**

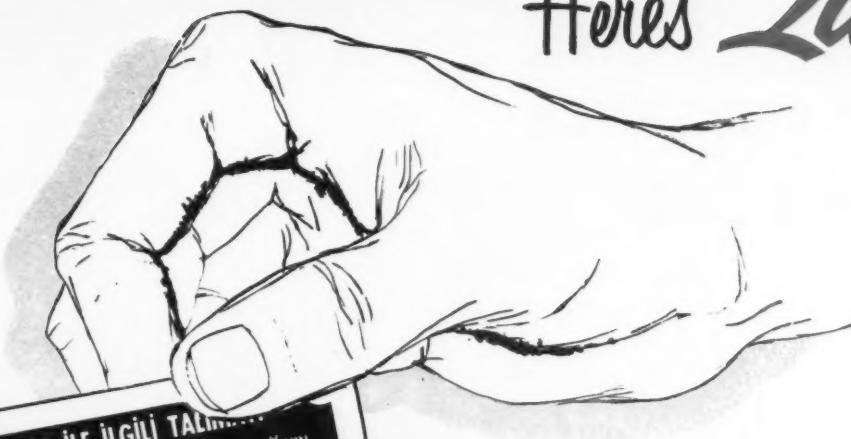
5321 Firestone Blvd., Southgate  
LORain 4-3281

**MOORE**  
DRY DOCK COMPANY

FORGING • HEAT TREATING • MACHINING • GRINDING • PLATE-SHEET-PIPE  
FABRICATION • STRUCTURAL STEEL FABRICATION AND ERECTION

Foot of  
Adeline St.,  
Oakland 23,  
California  
Higale 4-3919

# Here's Lufkin



## ÇALIŞMA İLE İLGİLİ TALİMAT

1. CİHAZI KURARKEN TEVZİN PİMİ RULMAN YATAĞININ İYİCE TEMİZLENMESİNE DİKKAT ET.
2. "STROKE" U DEĞİŞİTERKEN KRANK PİMİ DELİKLERİİN İYİCE TEMİZLENMESİNE DİKKAT ET.
3. MUVAZENE AĞIRLIĞINI İLÂVE EDERKEN YARIKLARI TEMİZLE. MUVAZENE AĞIRLIĞININ ENMİYET PARÇASINI İHTİVA EDEN UCU KRANKIN UZUN UCUNA DOĞRU OLMALIDIR.
4. ÇALIŞTIRMAŞA BAŞLAMADAN EVVEL MAKARA VE FREN KAMALARI İLE KRANK PİMİ SOMUNLARINI İYİCE SIKIŞIR.
5. ANI FREN YAPMA. KUVVETİ TEDİCİEN ARTIRARAK FREN YAP.

## YAĞLAMA

KÜKÜRT Veya KÜKÜRT MÜREKKİPLERİNİ İHTİVA EDEN YAĞLARI KULLANMA.  
PİTMAN KARNAK KOLU: VİTES KUTUSU İÇİN KULLANILAN YAĞIN AYNNINI KULLAN. YAĞI KAPAK ÜZERİNDE YAĞ SEVİYESİNİ GÖSTEREN TAPA HİZASINA KADAR DOLDUR. FAZLA YAĞ SİZİNTİLƏRƏ SEBİBİYET VERİR. YAĞ HAFTADA BİR KONTROL ET VE ALTI AYDA BİR DEĞİŞİR.

MERKEZ RULMANI, ASKİ, VE TEVZİN RULMANLARI: YÜKSEK TAZYİKLERE DAYANAN VE AKMA NOKTASI -15 DERECE C OLAN SAE 140 NUMARALI BİR YAĞ KULLAN. MERKEZ RULMANINI İKİ UCUNDAKİ TAPALARı SUKMEN SURETİYLE DOLDUR. ASKİ VE TEVZİN RULMANLARINI BLOF YERLERİNDEN YAĞ TAŞINCAYA KADAR DOLDUR. YAĞ HAFTADA BİR KONTROL ET VE ALTI AYDA BİR DEĞİŞİR. YEDEK PARÇA İSMARLARKEN E-BAT, SERİ NUMARASI VE ŞİPARİS NUMARASINI BİLDİR.

## "talking turkey"

## ÇALIŞTMA İLE İLGİLİ TALİMAT?

Literally, talking Turkey, or Turkish—for this is one of the Operating and Lubrication Instruction plates made up for a recent order . . . 15 carloads of Lufkin 10-foot stroke geared pumping units now in heavy-duty service in Turkish oil fields. This world-wide recognition of Lufkin stamina has very real meaning to buyers of industrial gears. For Lufkin supplies rugged gear assemblies to a wide range of industries. And every Lufkin gear inherits all the strength and knowledge gained in a half-century of building gear assemblies for the toughest service known—oil field pumping units, with their continually reversing shock loads, which operate 24 hours a day, month after month, under the most severe operating conditions. This is the stamina, the trouble-free service, you get when you use Lufkin Gears for Industry.

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## More than 20 kinds of sheets

A single sheet or a truckload. Pattern sizes or cut-to-order. You get what you want—on time—when you order from your nearby Ryerson plant.

Ryerson offers an unusually wide range of gauges and patterns in more than 20 kinds of sheets, including: tight-coat galvanized you can form without fear of flaking or peeling . . . bright-finished stainless in time-tested Allegheny metal . . . hot and cold rolled carbon steel . . . Ryex Expanded Metal, standard, flattened and grating. Ryerson also offers bars and band iron, tubing, angles, channels, etc.

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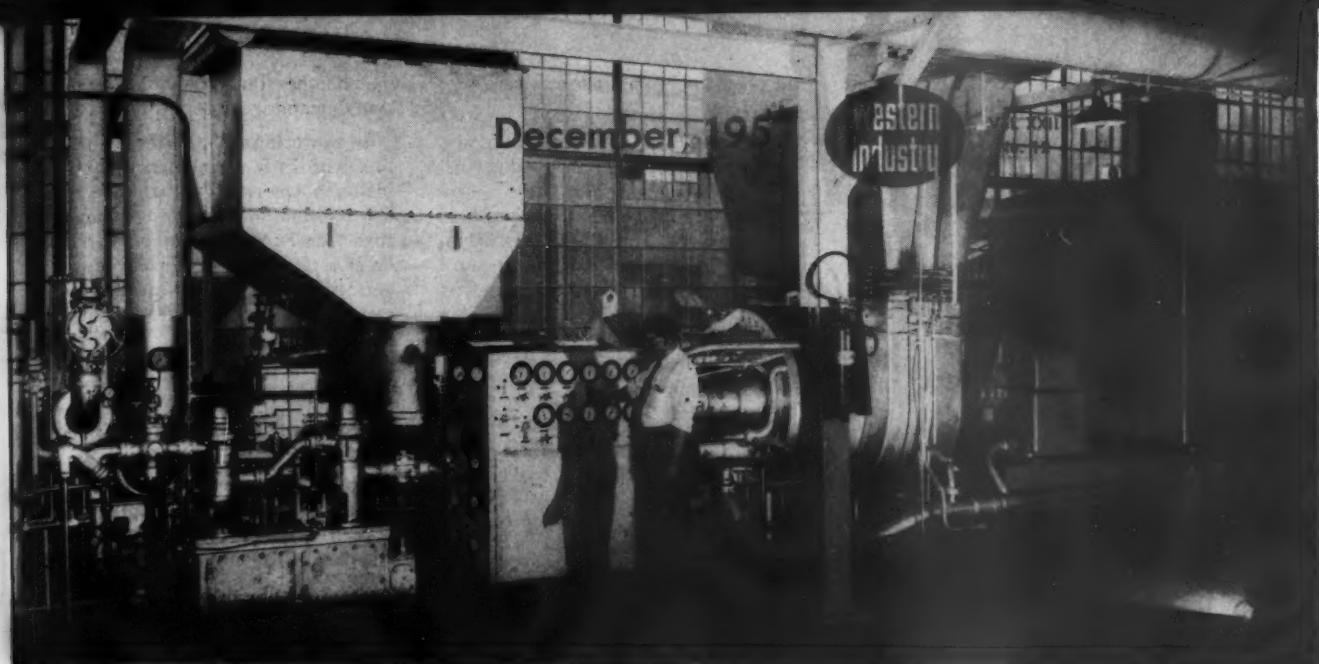


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... for more details, circle No. 25 on Reader Service Postcard



**DOUBLE-DUTY POWER**—William Campbell, Gates Rubber Co. power plant superintendent, adjusts controls of the gas turbine-generator unit. Rated at 5,000 kw.,

the system not only feeds electricity to the plant, but also supplies heat to make process steam in a heat recovery boiler.

## Western power system scores many firsts

*First to be installed in the rubber industry, this Denver power system is attracting nation-wide interest. The advantages can be applied to your operations.*

POWER PLANTS in various industries across the nation are continually installing new units, making changes, expanding facilities . . . and it seldom causes a stir. But one new "double duty" power unit, installed recently at a Western plant—the Gates Rubber Company in Denver, Colo.—is attracting nation-wide attention, especially in engineering circles.

First to be installed in the rubber industry, it is a new jet turbine, coupled with a generator for electric power which not only turns out 5,000 kilowatts of electricity but, through a heat-recovery boiler system, also gives a "bonus" of 35,000 lb. of steam per hour. With supplemental firing, the boiler can produce up to 120,000 lb. of steam per hour.

Built by General Electric, the turbine can be fired by either natural gas or distillate oil—or by a combination of both with change-over possible under full load conditions. It was installed at Gates to meet the needs of increased production where addi-

tional steam generating capacity as well as more electric power was required.

### "Two birds with one stone"

What attracts the interest of most visitors at Gates is the "killing-two-birds-with-one-stone" principle in action there. First, the turbine turns a generator, producing 5,000 kw. of electric power. But instead of having the hot exhaust blasts go up the stack, they are funneled into a heat-recovery boiler standing two stories high outside the power plant. Here the heat (850 deg. F.) generates up to 35,000 lb. of 200 psig. and 600 deg. F. steam per hr. as a "bonus."

With extra firing in the boiler, the steam capacity can be stepped up to 120,000 lb. per hr. This steam is piped into the plant where it is used in the curing, toughening or vulcanizing of rubber products of many kinds. Supplying one-fourth of the electrical needs, the new power unit does not

replace other equipment, but merely supplements it.

The electric power generated here is used to run some 10,000 electric motors at the Gates plant. They vary in size from small fractional horsepower units to giant 1,000 hp. motors, and they turn clocks, mixers, mills, tubes, calenders and other processing equipment. The electricity, as well as the steam, is used for process drying, vulcanizing and finishing of products.

Electrical distribution utilizes a radical system with load centers and bus duct, according to requirements. Lighting is gradually being changed to 277-v. fluorescent, and 220-v. power is being replaced with 480-v.

### How the jet turbine works

The turbine itself adapts the principles of that war-born monster, the jet engine, used so effectively in aircraft, to peace time use. Here's how it works:

Huge quantities of air are sucked into the machine and squeezed by a 15-stage compressor to around 75 to 90 lb. per sq. in. pressure. Natural gas, also compressed to 150 psi. is forced into this "squeezed" air and ignited by a high-grade spark plug (cost, about \$150 each). Six tiny burner nozzles, each about as large as a modern telephone and costing \$1,200 each, feed gas, oil spray, or both at once, to the turbine combustion chambers.

Expanding gases are channeled into "buckets" on the outer rim of large turbine wheels causing the wheels to spin. This furnishes the power to drive the air compressor and the generator. In some jet aircraft, the exhaust blast is used to help push the airplane through the air. At Gates, the blast heads into a boiler to generate steam. On some turboprop airplane engines the spinning shaft turns a propeller. In the Gates jet engine, the shaft, turning at a rate of 6,912 revolutions per min. is geared down to 3,600 rpm. and connected to the 5,000 kw. generator.

The turbine eats up natural gas at the rate of 2,000 cu. ft. per min.—120,000 cu. ft. per hr. It gulps 5½ million cu. ft. of fresh air every hour.

#### Three alternatives to consider

It was shortage of process steam for curing rubber products which brought about the need and installation of the new turbine-power and steam-generating equipment at Gates. In reaching

the decision, three alternatives were considered.

The first was a boiler, producing steam to run a non-condensing turbine. It would furnish "free" electricity while reducing steam pressure to between 200 and 300 lb. per sq. in. Since the original steam pressure would need to match 450 psi. now produced to run existing turbines, the pressure differential was not high enough to feasibly utilize the boiler and non-condensing turbine combination.

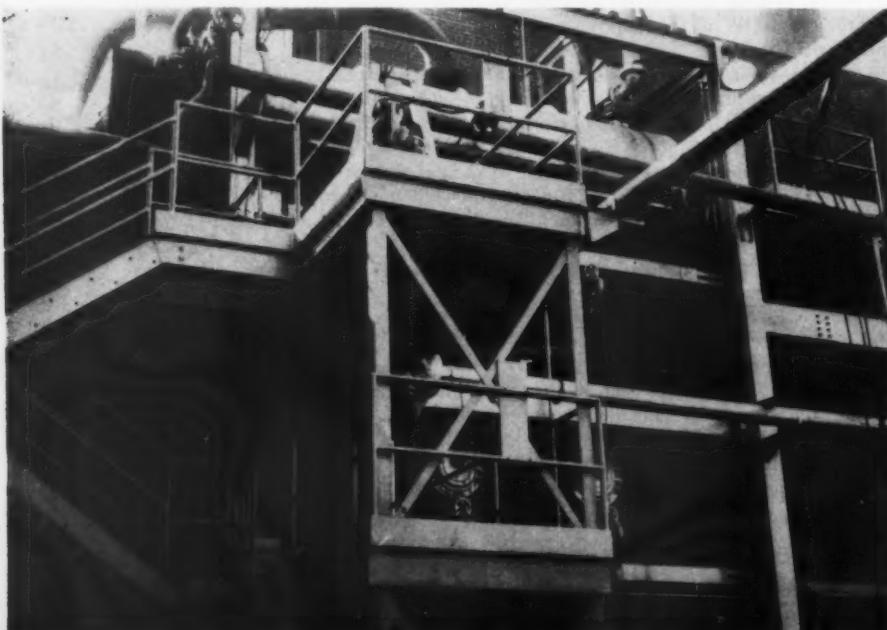
A second consideration was a boiler with pressure to match existing units and a condensing turbine with steam extraction at 200 to 300 psi. pressure. The extra steam condensed from the turbine when vitally needed for process made this consideration less economical than a gas turbine with a heat recovery boiler.

A third combination offered electricity first with a "bonus" of 35,000 lb. per hr. of process steam. It offered enough oxygen-rich excess air for supplemental firing of a 250,000-lb. per hr. boiler.

#### Low maintenance, high versatility

Gates chose the third system, selecting a 120,000-lb. per hr. boiler as best suiting its needs. The boiler can be operated as an independent unit in case of turbine outage by using a forced draft fan. Because of cold air, operation with the fan is less efficient. Boiler pressure can also be raised and automatically controlled at 450 psi. to

**HEAT RECOVERY BOILER**, located outside of the main power plant at the Gates Rubber Co., is key part of the program which gives a bonus of 35,000 lbs. of steam per hour in addition to 5,000 kw. of electricity.



match other boilers should the occasion demand it.

In more than 35,000 hr. of operation with little maintenance at utility plants in America, gas turbine-generator combinations have proved dependable. Consequently, maintenance will be at a minimum, engineers say, and versatility will be at a maximum because steam generation can vary from zero to full boiler rating on short demand.

#### Full capacity within minutes

Without the generator loaded, exhaust gases will keep the boiler up to pressure but not producing appreciable steam. In minutes, however, the boiler can produce full capacity by loading the generator or using supplemental firing, or both. From a cold start, the huge volumes of hot gases will have the boiler on line in less than 90 min. with 210 deg. F. feedwater.

Because of the comparatively low temperature (830 deg. F.) under full load on the generator, boiler materials are not damaged by the rapid rise.

Although the new turbine at Gates was the first in the rubber industry, the combination actually has other "firsts" to its credit. The dual firing feature where either gas or oil, or both at the same time, can be used for fuel is one of them.

Another "first" is the addition of a heat recovery boiler for generation of process instead of heating steam. The mid-September 1956 issue of *Power* magazine listed five other installations of units connected to boilers, but all of them are in other countries and the gas turbines are one-fifth the size of the 5,000-kw., 7,000-hp. unit at Gates.

Still another "first" is contained in the supplemental firing feature of the boiler. This permits using the oxygen-rich, heated air, which would otherwise be wasted out the boiler stack. With the addition of fuel at this point, boiler capacity is increased.

#### You can benefit, too

"Any industry needing generator, compressor, or pumping capacity in combination with process steam, or hot water, will find a gas turbine and heat recovery boiler combination as worthy of consideration," say Gates engineers. "The combination is working out beyond design predictions at Gates and the same advantages may well carry over to other plants."

**W**ANT TO REDUCE damage to material in transit to zero—and slash a quarter off your handling costs?

Coastwise Line has developed a complete system of unitized load handling that is foolproof against transit damage and which rushes loads to their destination quicker than ever before.

Called a "Whaleback Pallet Van" system, it is presently used to transport newsprint from Oregon City, Ore., to the *Los Angeles Times* via Long Beach, Calif. And it can be adapted to handle almost any commodity.

Here's how it works.

Rolls of newsprint weighing a compact ton apiece are slid onto a 17 x 7 ft. steel pallet. Ten to a pallet, they remain untouched until fed into hungry jaws of giant presses at Los Angeles.

**First step**—a Gerlinger fork lift truck of 40,000-lb. capacity waddles its arms under the pallet and with two heaves lifts two pallets and 20 tons of newsprint onto a trailer headed for the water terminal at Portland.

Another Gerlinger, twin of the one at Oregon City, does a second 20-ton lift and gently carries the whaleback pallets alongside the *SS Coast Progress*.

The ship has been specially redesigned to handle unitized loads. Its loading gear, originally built to handle loads up to 5 long tons, has been strengthened to lift up to 20 long tons.

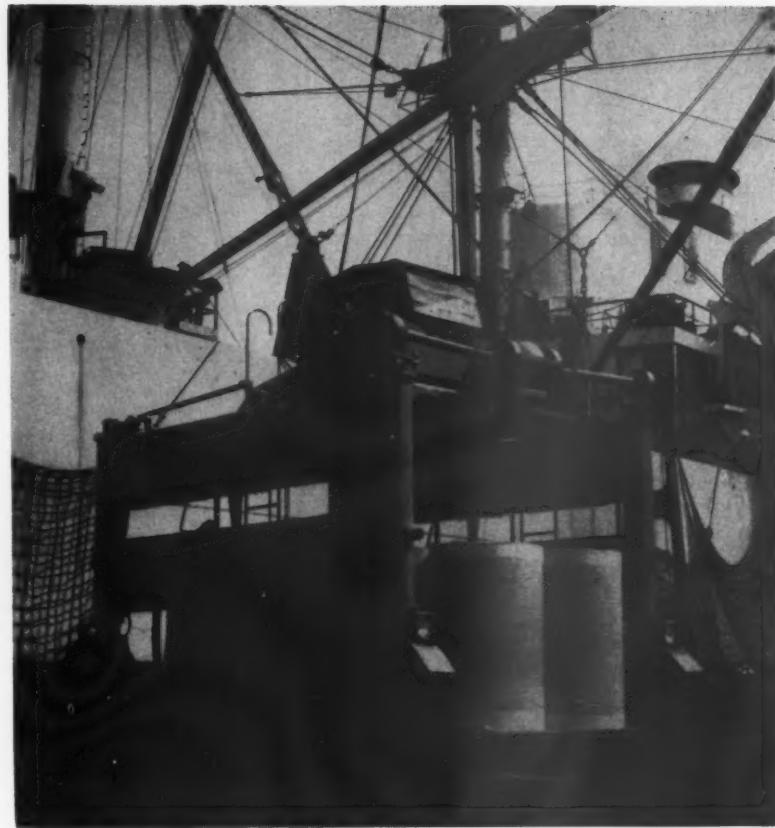
Deck obstructions have been removed to allow pallet vans to be carried above the holds, while the belly of the ship was modified to make unitized load storage easier.

**Second step**—derricks from the *Coast Progress* rattle from vertical storage position to right angle ready stations. Hooks on the rectangular lifting frame reach for the four corners of the pallet now resting on the dock. Electric winches take the strain, and ten tons of newsprint are swung into a stark silhouette against the sky before being lowered into the hold.

There a small fork lift truck with a fifth wheel attachment jockeys the pallets into the wings of the ship.

In no time flat the *Coast Progress* sits low in the water. When its load capacity is reached, the derricks swing back to vertical; hatches are hammered shut and it slips out of Portland and plows south toward Long Beach.

**Third step**—a Clarklift Y400 fork lift truck and a series 95, model



**STRADDLE CARRIER** snuggles 10 tons of newsprint and whisk it away. New features increase carrier's versatility.

## Reduce transit damage to 0 Slash handling costs by $\frac{1}{4}$

**FORK LIFT LOADING**—This fork lift features a combination side shifter and fork spreader. Seat is on left front fender.



120104, Ross straddle carrier wait patiently as the *Coast Progress* edges toward the wharf. As the whaleback pallets are swung out and gently placed on the wharf, the towering machines are already on the move.

Discharge rate prior to the adoption of unitized van loads was 33 tons an hr. per hatch. Now it approaches 100 tons an hr. per hatch—almost two-thirds savings in unloading time.

The long-legged Ross straddle is one of four special units custom built by Clark Equipment Co. Affectionately dubbed "the four spooks" because nobody on the production line knew exactly what the machines would look like until completed, they incorporate arresting features.

A double-sided frame gives the carrier rigidity needed in lifting loads up to 40,000 lb. Inside work-load area has been expanded to 104 in. to allow the straddle to roll over 96-in. wide vans.

Because of this increase in width it was necessary to add a 10-in. plate to the swinging shoes to allow the carrier to pick up the 84-in. pallets as well as the 96-in. vans.

Sound of the torque converter transmission gets louder as the straddle nears a waiting load . . . now it is directly over the pallet and the swinging shoes are feeling their way under the pallet. Steel meets steel, and in a smooth steady movement the hydraulic lift on the carrier silently raises the ten tons of newsprint.

The unit, snug in the belly of the carrier, is whisked away to the storage terminal where it awaits transportation by trailer to the *Los Angeles Times* as it is needed.

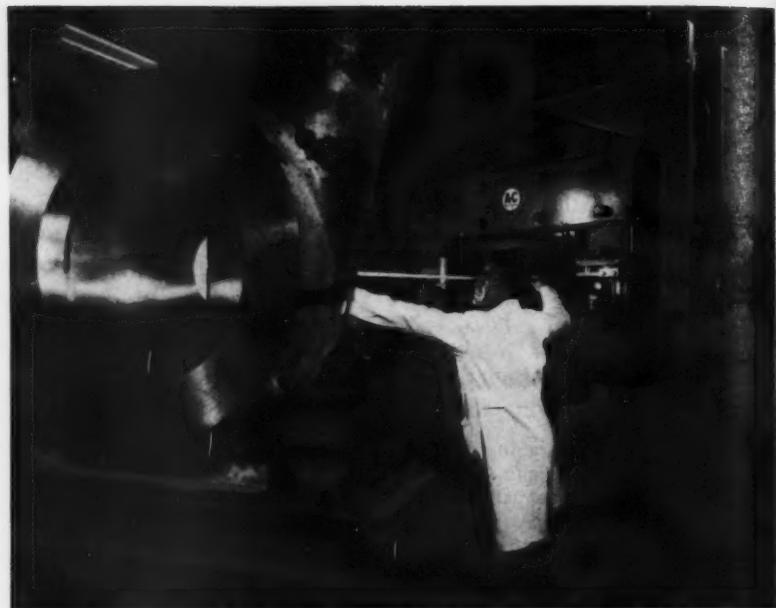
**Fourth step**—loading onto the carrier trailer by the Clarklift Y400.

Geared to handle loads up to 40,000 lb., this fork lift truck has the operator's seat on the left front fender to give him better visibility.

But it is the combination side shifter and fork spreader which really deserves special notice. This attachment automatically side shifts loads for accurate placement and adjusts the lateral position of the forks individually to fit any load size. The forks are too heavy to move by hand.

With all these modern means of material handling the Whaleback Pallet Van system of transportation ensures delivery of newsprint in perfect condition. Delicately balanced, high speed newspaper presses cannot risk upset by running damaged rolls of paper.

And if heavy rolls of newsprint can escape transit damage, why not a host of other commodities? Unitized load shipping is something you could use.



**ONLY ONE IN THE WEST**—This 24,000,000 v. betatron is now in use at the Electric Steel Foundry Co. in Portland. It offers . . .

## Testing penetration up to 20 in. of steel

TESTING PENETRATION up to 20 in. of steel is now possible at a Western plant—the Electric Steel Foundry Co. in Portland.

Testing is accomplished by the use of a 24,000,000 volt betatron, essentially a high-powered X-ray machine. This machine is the only one West of the Mississippi and one of only seven in the United States.

ESCO has long been a leader, in its field, in the searching out of better ways to insure high quality in its specialized steel products through the latest methods of non-destructive testing. The use of X and gamma radiography for examination of the structures of castings and weldments, as well as the Zygo method for detection of flaws and cracks nearer the surface of castings, have been commonplace at ESCO for years.

The new betatron is a Model RTI built by Allis-Chalmers Mfg. Co., Milwaukee, Wis. The ESCO installation represents an investment of approximately \$300,000.

The new installation displaces nothing in the ESCO metallurgical department; there will still be plenty of use for its 220,000-v. X-ray machine and its radiographic facilities which employ cobalt 60 radioactive isotopes.

But the betatron can penetrate 6 in. of steel in 60 sec.; 16 in. in 1½ hr. The 10-Curie cobalt 60 source would require 30 hr. to penetrate 6 in. and with much less sensitivity. The cobalt 60 source would be unable to penetrate 16 in. no matter what length of exposure.

Thus, complete radiographic facilities are available in the West for the examination of all metal sections up to 20 in. thick. Castings and weldments of an extremely high quality, completely free of internal defects, are essential for use as components in guided missile production and atomic energy plants—as well as other industrial applications.

Even users of heavy equipment in construction and engineering are demanding castings of tested high quality to assure better performance against the high costs of breakdowns on today's big projects.

ESCO's use of its radiographic facilities is not limited to its own production, but is available to other industries also on a job basis. In the event the traffic became too heavy, of course, outside jobs would have to be accepted on a preferential basis with respect to ESCO's own production needs.

# WESTERN CHAPTERS

—of 5 technical societies  
open for your membership\*

AIE.....AIPE.....AMHS.....SAM.....SIPMHE



... THE AMERICAN INSTITUTE OF INDUSTRIAL ENGINEERS is designed to cover the newer as well as the established practices of industrial engineering. Open to industrial engineers, other engineers and those in fields closely allied with industrial engineering.

## AIE Albuquerque

When chapter was formed: May 1956

Number of present members: 48



A. E. KAPING  
President



W. L. MARTIN  
Vice President



R. V. NORVILL  
Secretary



R. R. DAVIES  
Treasurer



J. J. BRUBAKER  
Director



L. E. SNODGRASS  
Director



J. R. SUBLETT  
Director



F. A. BENTZ  
Director

to and including the second level of supervision.

1958 program: Outstanding speakers at monthly meetings; a "Cost Control Clinic;" formal banquet; picnic; plant visits.

Meeting dates: Third Monday of each month.

Present officers: President, **Alvin E. Kaping**, Sandia Corp.; Vice President, **William L. Martin**, Sandia Corp.; Secretary, **Robert V. Norvill**, Sandia Corp.; Treasurer, **Ralph R. Davies**, Sandia Corp. Directors—**Joseph J. Brubaker**, Kennecott Copper Corp.; **Laurence E. Snodgrass**, Sandia Corp.; **Jack R. Sublett**, Sandia Corp.; **Fred A. Bentz**, Sandia Corp.

Whom to contact to join organization: **Paul M. Wallack**, 9519 Arvada, N.E., Albuquerque, New Mexico.

## AIE Central Arizona

When chapter was formed: March 1957

Number of present members: 40

Activities during past year: Outstanding speakers on industry in Arizona, computers, future of Arizona

\* These five technical societies were selected as holding the most interest for the majority of WESTERN INDUSTRY readers. However, these five societies are not *all* of those that may interest you. And, while every effort was made to gather information from all Western chapters of the five selected societies, we did not receive data on some. So if there is a particular group in which you're interested—or if you are not sure if there is a chapter of any society near your home—let us know, and we'll try to find the information for you.—Ed.

industry, engineering education, cost accounting, preventive maintenance, brainstorming.

**1958 program:** Combination of guest speakers and panel programs on subjects of interest to industrial engineers.

**Meeting dates:** Fourth Thursday of every month in Phoenix.

**List of present officers:** President,



R. A. NELSON  
President

**Raymond A. Nelson**, Reynolds Metals Co.; Vice President, **George S. Beakley**, Arizona State College; Secretary, **John Noonan**, Reynolds Metals Co.; Treasurer, **Emil Karas**, Goodyear Aircraft Corp. Directors—**Merle Nutt**, Arizona State College; **Bert Albright**, Consulting Engineer; **Don Teapole**, Reynolds Metals Co.; **Bob Lidington**, Goodyear Aircraft Corp.; **Marvin Rice**, Motorola.

**Whom to contact to join organization:** **Don Teapole**, 1211 West Oregon, Phoenix, Arizona.

## AIIE Rocky Mt.

**When chapter was formed:** October 1953

**Number of present members:** 75

**Activities during past year:** Monthly meetings with outstanding speakers and topics of interest to group as a whole.

**1958 program:** Besides regular monthly meetings, there will be a clinic. Date and subject to be announced.

**Meeting dates:** Second Tuesday of each month.

**Present officers:** President **Cornelius A. Hart**, Shwayder Brothers, Inc.; Vice President, **Donald N. Sullivan**, Gardner-Denver Co.; Secretary, **Roy S. Doan, Jr.**, United Air Lines; Treasurer, **Frank J. Tracy**, Gates Rubber Co.; Directors—**Ralph W. Becker**, Technical Services Co.; **Gene W. Christensen**, Montgomery Ward & Co.; **Frank P. Crock**, Gates Rubber Co.; **George F. Root**, Dow Chemical Co.; **Robert D. Tennant**, Colorado Fuel & Iron Co.

**Whom to contact to join organization:** **Fred Rahning**, Hathaway Instrument Co., 1315 S. Clarkson, Denver.

## AIIE Gr. Salt Lake

**When chapter was formed:** September 1955

**Number of present members:** 58

**Activities during past year:** Monthly meetings featuring prominent speakers; round table discussions; field trips; panel discussions on industrial engineering subjects.

The group conducted an engineering seminar at the University of Utah. A panel discussion was held on cost reduction, and noted speakers gave talks on standards, production main-

tenance, and industrial engineering in the mineral industry.

**1958 program:** Besides the regular program stated above, the chapter will conduct a Spring Seminar and will present a panel discussion on industrial engineering to other engineering societies. Also, the wives of members are active in an auxiliary group.

**Meeting dates:** First Tuesday of each month.

**Present officers:** President, **I. K. Hearn**, Kennecott Copper Corp.; Vice President, **Eleroy H. West**, Columbia-Geneva Steel Division; Secretary, **Charles R. Allcott**, Prudential Federal Savings & Loan Assoc.; Treasurer, **Bruce A. Lentz**, Kennecott Corp.

**Whom to contact to join organization:** **Don Willie**, Lark, Utah.



AIIE—Great Salt Lake. Left to right: C. A. Allcott, secretary; B. A. Lentz, treasurer; I. K. Hearn, president; E. H. West, vice president.

## AIIE Los Angeles

**When chapter was formed:** 1952

**Number of present members:** 250

**Activities during past year:** Regular clinics; speakers and sponsorship of tours; representation at the Joint Council in Los Angeles and Southern California and at the National Conference in New York.

**1958 program:** Regular meetings, clinics and tours; increased educational activities and efforts toward scholarship sponsorship.

The largest function and responsibility will be the Ninth National AIIE

Conference and Convention from June 12 to 14 at the Hotel Statler in Los Angeles. The L. A. AIIE chapter has been selected by National Headquarters at Columbus, Ohio, to organize the conference.

**Meeting dates:** Second Tuesdays of the month at Rodger Young Auditorium.

**Present officers:** President, **C. W. Whitston**, C. W. Whitston Associates; First Vice President, **D. L. Mihelich**, Bobrick Manufacturing Co.; Second Vice President, **W. R. Herbst**, Consolidated Western Steel Division; Secretary, **J. E. Jardine, III**, Thompson Products, Inc.; Treasurer, **H. J. Kraig**, Ernst and Ernst.

**Whom to contact to join organization:** **Peter P. Price**, 134 S. Wetherly Drive, Los Angeles 48, Calif.



AIIE—Los Angeles. Seated, left to right: Fred Westberg, board of directors; Don Mihelich, first vice president; C. W. Whitston, president; J. E. Jardine III, secretary; Harry Kraig, treasurer. Standing, left to right: A. A. Cowan, immediate past president; J. C. Hiller, board of directors; Don Smith, past treasurer; Howard Dickason, past president; Jack Chambers, past board member; Rogers Akers, board member and national advertising manager.

## AIE Portland

When chapter was formed: May 1957

Number of present members: 25

Activities during past year: Prominent speakers on subjects of interest to industrial engineers. Field trip to the Owens-Illinois glass plant at Portland.

1958 program: Speakers on management and training subjects; group participation sessions; plant tours; joint dinner meeting with wives.

Meeting dates: Second Tuesday of each month.

Present officers: President, **A. R. Sadewic**, Bingham Pump Co.; Vice President, **A. M. Panter**, Montgomery Ward & Co.; Secretary, **Walter Torkildsen**, Bingham Pump Co.; Treasurer, **John N. Raleigh**, United States National Bank; Directors—**Naylor Cole**, Pacific Power & Light Co.; **William Spencer**, Owens-Illinois Glass Co.; **William Engessor**, Oregon State College.

Whom to contact to join organization: **Joseph B. Sparkman**, 703 Board of Trade Building, Portland 4, Oregon.

AIE—Portland. Left to right: **A. M. Panter**, vice president; **A. R. Sadewic**, president; **John N. Raleigh**, treasurer; **Walter Torkildsen**, secretary.



## AIE San Francisco- Oakland

When chapter was formed: 1945

Number of present members: 210

Activities during past year: Outstanding speakers at monthly meetings; two field trips; participation in Engineers' Week; participation in the Industrial Engineering Institute held at University of California; 15-week series of work simplification programs over television station KQED; sponsorship of extensive Junior Achievement program in the Bay Area; financial assistance to student chapter of AIE at University of California; cooperation with University of Califor-

nia in presenting classes on industrial engineering.

1958 program: Improve quality of activities along lines conducted last year.

Meeting dates: First Thursday of each month in Berkeley.

Present officers: President **H. F. Downie**, Columbia-Geneva Steel Division; Vice President, **N. E. Grabstein**, Kaiser Aluminum and Chemical Corp.; Secretary, **R. W. Hodson**, Montgomery Ward and Co.; Directors—**R. L. Knighton**, Columbia Geneva Steel Division; **F. E. Taylor**, Oliver Tire and Rubber Co.; **N. A. Karvelis**, Columbia-Geneva Steel Division; **T. F. Burnes**, Hexcel Products Co.

Whom to contact to join organization: **James Cavanah**, 2712 Bonifacio St., Concord, Calif.



AIE—San Francisco-Oakland. Left to right: **Ed Slagle**, chairman, long range planning; **T. F. Burnes**, director; **R. L. Knighton**, director; **Dan Meyers**, chairman, public and chapter relations; **H. F. Downie**, president; **Gene Yoder**, chairman, publications; **N. E. Grabstein**, vice president; **J. A. Cavanah**, chairman, membership; **A. B. Casad**, historian; **R. Schwing**, chairman, fellowship.

## AIE San Diego

When chapter was formed: 1953

Number of present members: 70

Activities during past year: Organized the annual Western regional AIE conference and convention in April with an attendance of some 200. Leading commercial firms exhibited the latest in office and plant equipment.

At monthly meetings, eminent guest speakers presented views on new concepts in the art of industrial engineering and its applications.

1958 program: Field trips to outstanding plants and a Navy demonstration of high speed rockets. Monthly meetings handled by different chairman who present programs of interest to industrial engineers.

Meeting dates: Every second Tuesday of the month.

Present officers: President, **D. L. Johnson**, Convair; Vice President, **T. F. Carter**, Solar; Treasurer, **M. Franklin**, Narmco; Secretary, **J. J. Senes**, NRF.



**D. L. JOHNSON**  
President



**T. F. CARTER**  
Vice President



**M. FRANKLIN**  
Treasurer



**J. J. SENES**  
Secretary

**Senes**, NRF, Naval Station; Directors—**L. R. Becht**, Naval Air Station; **R. M. Hanna**, Ryan; Board of Governors—**D. B. Acker**, Convair; **M. Capp**, San Diego State College; **L. K. Pratt**, Ryan; **H. P. Rasp**, Rohr; **D. J. Thornton**, Solar.

Whom to contact to join organization: **Mort Satten**, 6065 Henderson Drive, La Mesa, Calif.



AIE—Seattle. Left to right: **Marshall E. Macy**, treasurer; **Jerry Watson**, conference chairman; **Henry E. Thomson, Jr.**, president; **Elliott DeForest**, vice president; **Karl Peterson**, trustee; **Cecil W. Parrott**, secretary.

## AIE Seattle



*When chapter was formed: 1952  
Number of present members: 66  
Activities during past year: Speakers from local industries; field trips; assisted in JET program of Puget*

**... THE AMERICAN INSTITUTE OF PLANT ENGINEERS appeals to a broad range of engineering. But, while plant engineers may function under different titles, they have the common aim of supplying services to keep industry operating smoothly. AIPE chapters are open to plant engineers and equivalent.**

## AIPE Los Angeles

*When chapter was formed: December 1954*

*Number of present members: 82*

*Activities during past year: Dinner meetings featuring prominent speakers; joint meeting with Los Angeles Council of Engineering Societies during Engineers' Week; participation in the Western Plant Maintenance and Engineering Conference in San Francisco.*

*1958 program: Continuation of above program; increasing membership; further efforts to advance plant engineering.*



AIPE—Los Angeles. Left to right: **M. S. Bolzer**, secretary; **C. A. Gallaher**, president; **G. Evans**, treasurer; **W. H. Slater**, vice president.

## AIPE San Francisco

*When chapter was formed: 1950  
Number of present members: 60*



AIPE—San Francisco. Left to right: **Bob Scholar**, member at large; **Bob Pleski**, secretary; **Ron Morey**, treasurer; **Ken Buckley**, vice president; **Keith Leonard**, president.

Sound Engineering Council.

Also, the chapter conducted its Third Annual Cost Reduction Conference at the University of Washington, with approximately 200 attending.

*1958 program: Continuation of program. In March or April a fourth Cost Reduction Conference is planned.*

*Meeting dates: Second Wednesday of each month.*

*Present officers: President, **Henry E. Thomson, Jr.**, Alaska Communications System; Vice President, **Elliott DeForest**, Joseph B. Ward & Associates; Secretary, **Cecil W. Parrott**, Boeing Airplane Co.; Treasurer, **Marshall E. Macy**, Boeing Airplane Co.*

*Whom to contact to join organization: **C. W. Parrott**, 16245 S.E. 7th, Bellevue, Wash.*

*Activities during past year: Speakers at monthly meetings; field trips through local industries; participation in Western Plant Maintenance and Engineering Conference held in San Francisco.*

*1958 program: Eight dinner meetings plus several field trips.*

*Meeting dates: Second Thursday of each month.*

*Present officers: President, **Keith Leonard**, Kaiser Aircraft & Electronics; Vice President, **Ken Buckley**, San Francisco Naval Shipyard; Treasurer, **Ron Morey**, Pacific Paint & Varnish; Secretary, **Bob Pleski**, Pacific Electric Motor Co.; Member-at-large, **Bob Scholar**, Standard Oil Co.*

*Whom to contact to join organization: **Mark Norberg**, Electric Auto Lite Co., 9716 Sunnyside St., Oakland.*



... THE AMERICAN MATERIAL HANDLING SOCIETY serves men interested and active in any of the many phases of the field. The chapters emphasize exchange of information on theory and practice to advance further the efficient use of the many means of moving material.

## AMHS Denver

When chapter was formed: 1951

Number of present members: 52

Activities during past year: Dinner meetings featuring prominent speakers; seminars; special meetings.

1958 program: Speakers and seminars on material handling subjects relating to the steel industry, air transportation, brick industry, warehousing, etc.; stag night; bosses' night.

Meeting dates: Third Thursday of each month.

Present officers: President, Harry

## AMHS Los Angeles

When chapter was formed: 1953

Number of present members: 208

Activities during past year: Prominent speakers at dinner meetings; plant tours for members and guests; stag party; panels.

This past year, the Los Angeles chapter received the top award in membership increase (40%) among chapters throughout the nation (see WESTERN INDUSTRY, Sept., p. 26)

1958 program: Packaging panel; chapter hostess selection; sponsorship

Newmann, Plant Equipment Co.; Vice President, Carl Ray Nelson, Dixon Paper Co.; Treasurer, John Fox, Landes, Zachary & Peterson Co.; Secretary, Shelton Streeter, Denver

Reel & Tank Co.; National Director, Vern Bybee, Gates Rubber Co.

Whom to contact to join organization: Harry H. Newmann, 1400 Market St., Denver, Colo.

AMHS—Denver. Left to right: Charles Schoenecke, membership chairman; Shelton H. Streeter, secretary; John Fox, treasurer; Ray Nelson, vice president; Harry H. Newmann, president; Dana Malchow, publicity chairman; Vern Bybee, national director; William Francis, program chairman.



of Second Western Material Handling Show and Conference (May); host for National Fork Truck Rodeo (May); awards.

Meeting dates: Second Thursday of each month.

Present officers: President, Clyde Hinckley, Market Basket; Vice President, Tony Flinck, Lincoln Mercury Division; Secretary, Bud Semco, W. B. Semco and Associates; Treasurer, J. Alden Lane, Alden Equipment Co.; Directors—Bob Braun, Jr., Robert H. Braun Co.; Ed Sullivan, Equipment Engineering Services; J. M. Druliner, Norris Thermador Corp.; Robert J. Muth, Electric Storage Battery Co.; Andrew Biggs, May Company; James P. Kinney, James P. Kinney Co.; Wm. G. Goninan, So. California Gas Co.

Whom to contact to join organization: Write to chapter office, 2807 Sunset Blvd., Los Angeles 26, Calif.

### The West is proud . . .

that two Westerners have been elected to top posts in the national AMHS organization. They are Wm. E. Kappler (left) who is the national president, and Ed Sullivan (right) who is a national vice president. Kappler is a past president (1954-1955) of the Los



WM. E. KAPPLER  
AMHS National  
President

ED SULLIVAN  
AMHS National  
Vice President

Angeles AMHS and Sullivan is currently serving as its public relations director.



AMHS—Los Angeles. Left to right: Robert Braun, Jr., director; Ed Sullivan, public relations director; A. E. Flinck, vice president; Wm. G. Goninan, past president; Clyde E. Hinckley, president; W. B. Semco, secretary; Bob Muth, director; J. M. Druliner, director.

## AMHS San Diego

When chapter was formed: Spring 1955

Number of present members: 38

Activities during past year: Dinner meetings featuring speakers on outstanding subjects related to material handling; field trips; participation in shows and conventions; special parties for holidays.

*1958 program:* Continuation and expansion of program along lines during past year.

*Meeting dates:* Last Thursday of each month.

*Present officers:* Chairman, **Ted Anderson**, Convair; Vice Chairman, **Don Dearth**, Standard Iron Supply; Treasurer, **C. S. Goodale**, C. S. Goodale Co.; Secretary, **Chuck Myers**, Robert H. Braun Co.

*Whom to contact to join organization:* **C. S. Goodale**, C. S. Goodale Co., 3695 Kettner St., San Diego or **Chuck Myers**, Robert H. Braun Co., 2208 Imperial, San Diego.

## AMHS Northern California

*When chapter was formed:* 1954

*Number of present members:* 100  
*Activities during past year:* Speakers on the subject of automation, operations research and management consultants, as applicable to the field of material handling; dinner and dance meeting.

The second annual seminar was

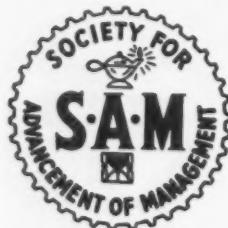
held at Stanford University where recognized industry spokesmen and professors conducted discussions on modern trends in material handling.

*1958 program:* Forum type discussion meetings; speakers on labor relations, safety and maintenance; field trips; spring seminar.

*Meeting dates:* First Thursday of each month, September through May.

*Present officers:* President, **Hiram**

**AMHS—Northern California.** Seated, left to right: **Raymond J. Perin**, membership chairman; **Ellis H. Woolley**, recording secretary; **Hiram D. Smith**, president; **Larry Megargee**, vice president. Back row, left to right: **Lee F. Delventhal, Jr.**, director; **Larry F. Tennent**, vice president; **Walter C. Brunberg**, publicity chairman; **Robert O. Swendsen**, educational chairman; **Leslie Herman**, program chairman.



... THE SOCIETY FOR ADVANCEMENT OF MANAGEMENT aims to promote a better understanding and application of the principles and methods of professional or scientific management. Open to executives, administrators and professionals who consistently exercise independent judgment in their businesses or firms.

**G. McCauley**, Shand and Jurs Co.; Vice President—Membership. **Eugene L. Dessert**, Kaiser Aluminum & Chemical Corp.; Vice President—Program, **Ernest C. Elwood**, Pacific Telephone & Telegraph Co.; Secretary **Stephen G. Stewart**, Hexcel Products, Inc.; Treasurer, **Edwin R. Parks**, Ernst and Ernst. Directors—

**Homer T. Craig**, Homer T. Craig & Staff; **Ernest C. Elwood**, Pacific Telephone & Telegraph Co.; **John W. McFarland**, East Bay Municipal Utility District.

*Whom to contact to join organization:* **Eugene L. Dessert**, Kaiser Aluminum & Chemical Corp., 1924 Broadway, Oakland, Calif.

## SAM East Bay

*When chapter was formed:* September 1957

*Number of present members:* 55

*Activities during past year:* Speakers on subjects in labor relations, scientific management, executive development, politics and economic forecasting.

*1958 program:* Expansion of membership and presentation of interesting programs.

*Meeting dates:* Fourth Monday of each month in Berkeley.

*Present officers:* President, **Bruce**



**B. G. McCAULEY**  
President



**E. C. ELWOOD**  
V.P.—Program

## SAM Los Angeles

*When chapter was formed:* 1939

*Number of present members:* 160

*Activities during past year:* Study group on the application of electronic data processing systems; monthly meetings featuring prominent speakers; assistance in forming Santa Ana



F. FISHER  
President



D. L. WHEELER  
Vice President



C. W. HOLMES, Jr.  
Secretary



R. DISTERICK  
Treasurer

and San Diego chapters; co-sponsorship of Industrial Engineering Institute at UCLA; improvement of management aspects of hospital operations.

**1958 program:** Emphasis on executive development in the broad sense. This is being accomplished by a series of panels at regular monthly meetings at which experienced executives and educators concerned with various

areas of management practice will discuss questions which must be answered in the course of developing a fully rounded management staff.

The L. A. chapter's program will seek to cover and integrate four major areas: (1) managerial principles, policies and practices; (2) economic, social and legal aspects of business within the framework of the economy; (3) functional operating staff

areas of production, marketing, finance, personnel, public relations, and industrial relations; (4) personal development of the executive.

**Meeting dates:** Third Thursday of each month.

**Present officers:** President, **Fred Fisher**, Benjamin Borchardt & Associates; Vice President, **Donald L. Wheeler**, Robertshaw-Fulton Controls Co.; Secretary, **Charles W. Holmes, Jr.**, Western Airlines, Inc.; Treasurer, **Robert Disterick**, County of Los Angeles; Directors—**George Logan**, North American Aviation Co.; **David R. Verrill**, Flying Tiger Line, Inc.; **June C. Duran**, California Test Bureau; **Harold F. Wibke**, Square D Company. National Director is **John F. Leach**, County of Los Angeles.

**Whom to contact to join organization:** **George H. Rathmell**, Pacific Telephone and Telegraph, 740 Olive St., Los Angeles.

## SAM Orange Coast

**When chapter was formed:** April 1956

**Number of present members:** 35

**Activities during past year:** Dinner meetings featuring speakers on management subjects. Dr. Lillian Gilbreth spoke on Jan. 30, 1957, which was the charter night for the organization.

**1958 program:** Dinner meetings featuring outstanding speakers; University chapter program; one-day work shop (clinic); seminar program.

**Meeting dates:** Second Thursday of each month in Anaheim.

**List of present officers:** President, **Joseph W. Winkler**, Pacific Tile & Porcelain Co.; Vice President, **Robert R. Twombly**, Twomby & Associates; Secretary, **J. Donald Milam, Jr.**, Beckman Instruments, Inc.; Treasurer, **Clayton B. Tillotson**, Sherwood Accounting; Directors—**Lewis W. Barrett**, Sylvania Electric Products, Inc.; **Delford E. Hanke**, Kimberly Clark Corp.; **Richard E. Moore**, Beckman Instruments, Inc.; **Dana W. Paff**, Townsend Co.; **James W. Tetrault**, Pacific Tile & Porcelain. National Director is **Vernon A. Metzger**, Long Beach State College.

**Whom to contact to join organization:** **James W. Tetrault**, 7716 E. Olive, Paramount, Calif.

Again, the West is proud...that Hugo W. Druehl (right) was elected as National Secretary of the Society for the Advancement of Management. Druehl is a former president of the Los Angeles SAM chapter.



HUGO W. DRUEHL  
National Secretary  
S.A.M.



**SAM—Orange Coast.** Left to right: Dana W. Paff, director of education; Vernon A. Metzger, national director; Robert R. Twombly, vice president; Joseph W. Winkler, president; J. Donald Milam, Jr., secretary; Delford E. Hanke, director of clinics and seminars; James W. Tetrault, director of membership; Richard E. Moore, director of awards.

## SAM Sacramento

**When chapter was formed:** 1953

**Number of present members:** 95

**Activities during past year:** Outstanding speakers on subjects including automation, incentive management, successful human relations, executive development, cost reduction, industrial relations, creative selling, increasing executive efficiency, industrial engineering, financial planning.

Also conducted a seminar (four sessions) on "Communication in Management." The first Sacramento Management Conference was held in March, sponsored by S.A.M. and six other professional societies of Sacramento. A research project was con-



**T. JOHNSON**  
Chairman of Board



**F. A. WONN**  
President

ducted on executive reading. This project was entitled: "What Does and What Should the Executive Read?" The Sacramento S.A.M. sponsored and arranged for hospital officials to study better management practices.

**1958 program:** Speakers on effective business organization, quality control, human relations and related topics. A second Sacramento Management Conference will be conducted, co-sponsored with other local societies.

A research project will be conducted on "Aid in National Office Sponsored Projects." The Hospital Aid program will be continued in hospitals in surrounding areas.

**Meeting dates:** First Tuesday of each month, September through June.

**List of present officers:** Chairman of Board of Directors, **Thores Johnson**, Made-Rite Sausage Co.; National Director, **Sterling Doughty**,

Sacramento Frosted Foods Co.; President, **Fred A. Wonn**, Aerojet-General Corp.; Vice President—Programs, **Dale E. Cook**, Livingston Personnel Services; Vice President—Meetings, **Ralph B. Lane**, Crocker-Anglo National Bank; Vice President—Membership, **Tom E. Goodwin**, Goodwin-Cole Co.; Vice President—Special Projects, **A. Robert Ernest**, Aerojet-General Corp.; Vice President—Conferences, **William F. Bock**, Campbell Soup Co.; Secretary, **Steve S. Stevenson**, Steno Print & Mailing Service; Treasurer, **Carr Rowland**, Aerojet-General Corp.

**Whom to contact to join organization:** **Steve Stevenson**, Steno Print & Mailing Service, 2118 J Street, Sacramento.

## SAM San Francisco

*When chapter was formed:* 1940

*Number of present members:* 172

*Activities during past year:* Monthly dinner meetings featuring prominent speakers.

*1958 program:* Regular monthly meetings; all day seminar on measurement of management; plant visits.

*Meeting date:* Second Monday of each month at Engineers' Club.

*Present officers:* President, **Alf E. Werolin**, Portable Air Cooler and Heater; National Director, **William R. Willard**, United States Steel Cor-

poration; Vice President—Program, **Kenneth D. McCloskey**, East Bay Municipal Utility District; Vice President—Membership, **Clifton D. Terry, Jr.**, Bank of America; Secretary, **Robert L. Bilger**, C and H Sugar Refining Corp.; Treasurer, **Kenneth S. Caldwell**, Ernst & Ernst; Student Chapter Co-ordinator, **Jack D. Rogers**, University of Calif.; Directors—**William P. Feiten**, United Air Lines; **Paul Holden**, Stanford University; **William L. Ingraham**, Standard Oil Co. of Calif.; **Clifford E. Schink**, C and H Sugar Refining Corp.; **Joseph P. Williams, Jr.**, Bank of America.

**Whom to contact to join organization:** **Clifton D. Terry**, c/o Bank of America, 300 Montgomery St., San Francisco.



**SAM—San Francisco.** Seated, left to right: **Kenneth D. McCloskey**, vice president, program; **William R. Willard**, national director; **Alf E. Werolin**, president; **Clifton D. Terry, Jr.**, vice president, membership. Standing, left to right: **Joseph P. Williams, Jr.**, director; **Robert L. Bilger**, secretary; **Kenneth S. Caldwell**, treasurer; **Robert C. Goetz**, assistant secretary; **William L. Ingraham**, director; **Donald P. Krotz**, assistant to vice president, membership.

## SAM San Diego

*When chapter was formed:* May 16, 1957

*Number of present members:* Approximately 100

*1958 program:* Participation of three interest groups: (1) human relations management; (2) long range planning; (3) financial planning. Others being planned. Each interest group presents one of the monthly programs, basing it upon the particular subject of their meetings.

Other general aims include the presentation of monthly programs which will be of great value to management representatives, and providing a forum for the exchange of ideas.

*Meeting dates:* Fourth Thursday of each month except December, July and August.

*Present officers:* President, **Milton F. Fillius**, National Steel and Shipbuilding Corp.; Vice President—Program, **Charles L. Terrel**, Convair; Vice President—Membership, **Charles R. Campbell**, Rohr Aircraft; Secretary, **Lester Ernest**, City of San Diego; Treasurer, **George F. Wilson**, San Diego Trust and Savings Bank; National Director, **Herbert Kunzel**, Solar Aircraft; Director at Large, **Frances Torbert**, San Diego State College.

**Whom to contact to join organization:** **Charles R. Campbell**, Rohr Aircraft Co., Chula Vista, Calif.

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Oil, kerosene, and alcohol "burn" by combining chemically with oxygen from the air. But it takes pure oxygen with these fuels to speed rocket planes faster than sound . . . to drive missiles beyond the earth's atmosphere.

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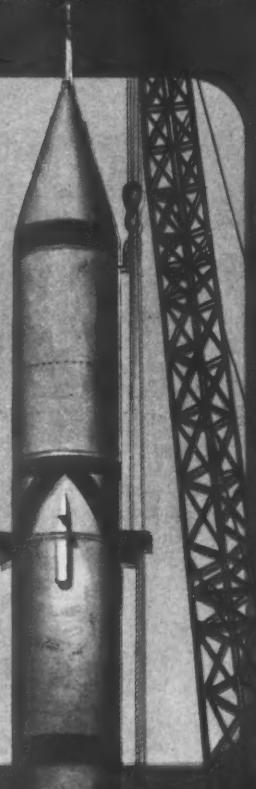
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Liquid oxygen from LINDE's DRIOX oxygen units is teamed with liquid fuels to propel missiles and rocket planes.



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## SIPMHE No. Calif.

*When chapter was formed:* 1948  
*Number of present members:* Approximately 40

*Activities during past year:* Discussions, speakers and films on following subjects: Handling of tomato harvest, wooden containers, the Evans container, Klimp containers, Elmendorf container research, unit loads of cans and lumber, conveyor systems, damage prevention on carriers piers, sugar bulk carriage, packaging and handling of aluminum sheets, truck shipments, pressure sensitive tapes.

Also, tours were conducted to a ship



**SIPMHE—Northern California.** Seated, left to right: R. W. Stevens, vice president; Capt. W. C. G. Brouwers, president; C. L. Lippman, national ex-vice president. Back row, left to right: Gordon Covington (inset), secretary-treasurer; Wm. L. Dalton, vice president; Paul Heppes (inset), vice president; D. A. Timmerman, vice president.

and a bakery. The group sponsored the Industrial Material Handling and Packaging Conference at Stanford

University in March.

*1958 program:* Regular meetings including speakers, field trips, films, etc.; social meeting on 10th anniversary of chapter; membership promotion; sponsoring a conference on packaging and material handling along lines similar to last year's.

*Present officers:* President, W. C. G. Brouwers, Insurance Co. of North America; Vice Presidents—R. W. Stevens, Fibreboard Paper Products Corp.; G. P. Heppes, Portco Corp.; D. A. Timmerman, Zellerbach Paper Co.; W. L. Dalton, Container Laboratories, Inc.; Secretary-Treasurer, E. G. Covington, Wooden Box Institute.

*Whom to contact to join organization:* W. C. G. Brouwers, Insurance Co. of North America, 222 Sansome St., San Francisco.

chapters.

*1958 program:* Participation in University of Calif. Handling & Packaging seminar; dinner meetings; field trips.

*Meeting dates:* Second Thursday of each month in Palo Alto.

*Present officers:* President, R. A. Koller, Food Machinery & Chemical Corp.; Vice President, G. Hoskins, Ampex Corp.; Secretary, F. Hannum, Zellerbach Paper Co.

*Whom to contact to join organization:* Fred Hannum, Zellerbach Paper Co., 45 No. San Pedro St., San Jose, Calif.

## SIPMHE Seattle

*When chapter was formed:* March 1956

*Number of present members:* 31

*Activities during past year:* Speakers at monthly meetings; field trips; Ladies' Night.

*1958 program:* Continuation of above program; fostering the Purdue University Industrial Packaging Course.

*Meeting dates:* Third Wednesday of each month.

*Present officers:* President, Sid Peretti, Pacific Car & Foundry Co.; Vice President, John F. Mierz, Boeing Airplane Co.; Secretary, Ray Kemp, Kenworth Motor Truck Co.; Treasurer, David S. Paxton, West Coast Paper Co.; Directors—Palmer Arzo,

Industrial Crating & Packing; Bill Segerstrom, Packaging Commodities; Charles W. Long, United Control Co.; Wm. H. Meadowcroft, Weyerhaeuser Timber Co.; Sam L. Crawford, Galbraith Co.

*Whom to contact to join organization:*



**SID PERETTI**  
President

## SIPMHE Cen. Calif.

*When Chapter was formed:* June 1957

*Number of present members:* 22

*Activities during past year:* Dinner meetings featuring prominent speakers, field trips, membership drives, joint meetings with other

### Technical data on medium-duty copper alloy

This new four-page technical data sheet describes in detail a medium-duty copper alloy, giving chemical analysis, general design data, and shaft requisites for satisfactory performance. A bearing lining material selector shows life expectancy in thousands of hours and maximum unit bearing pressure. *Federal-Mogul Div., Federal-Mogul-Bower Bearings, Inc.*

... for your copy, circle No. 251

### Picture book of uses for bronze bushings

The many small photographs in this four-page book picture applications for bronze bushings, also listing the name of the firm where the photograph was made. Brief facts about the bushings are included, along with product pictures. *Superior Kendrick Bearings, Inc.*

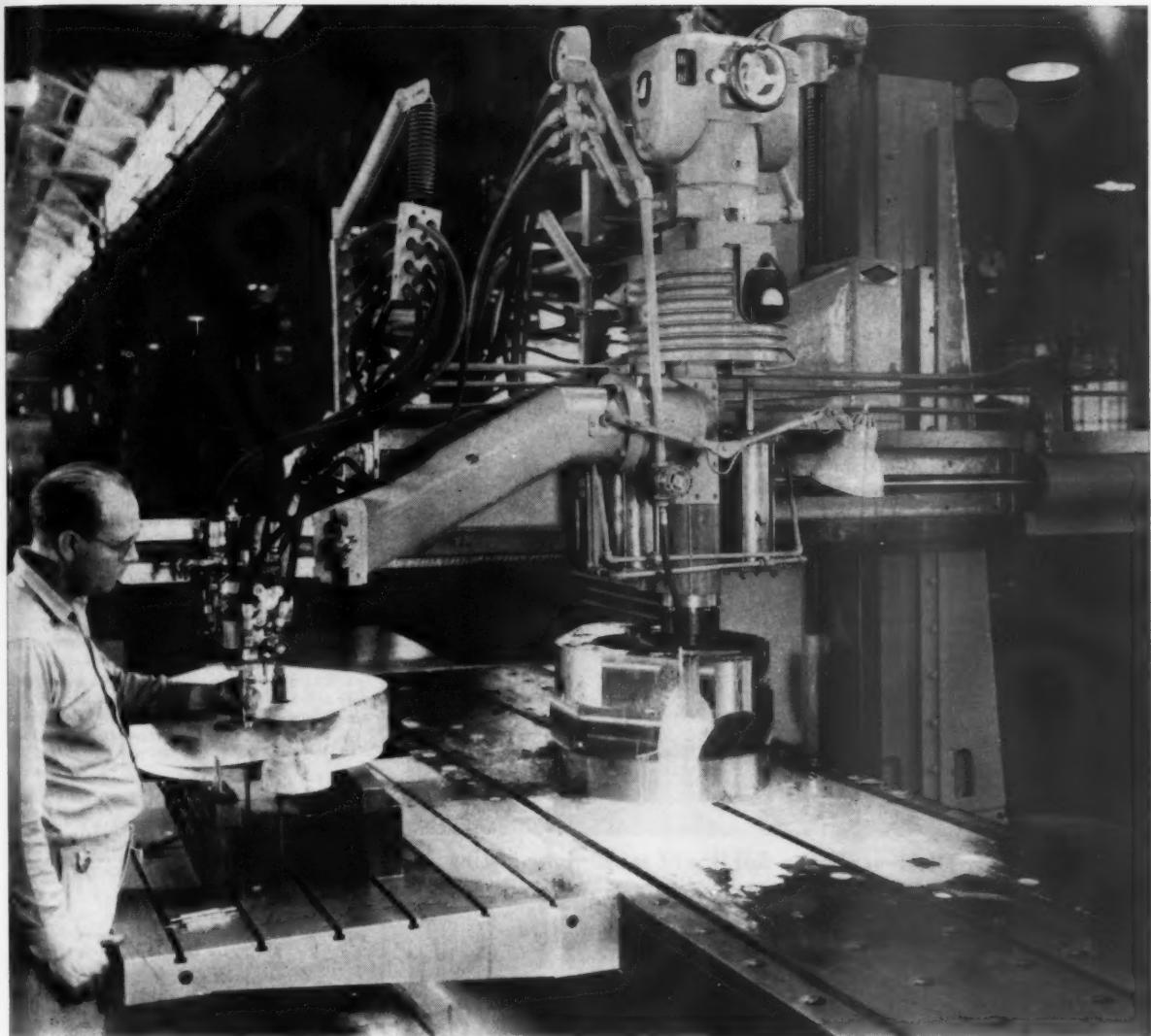
... for your copy, circle No. 252

### Roller bearing maintenance guide book

This 30-page maintenance handbook designed as an instruction book for servicemen and machine builders, will acquaint you with correct procedures to follow in installing, removing, storing and lubricating Hyatt roller bearings. It includes sections on roller bearing terminology, types of bearings, replacement, storing practice, cleaning, roller bearing damage, installation, care of other machine parts, lubrication and general service. Many recommended practices are illustrated step by step. *Hyatt Bearings Div., General Motors Corp.*

... for your copy, circle No. 253

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on  
Bearings  
yours  
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asking



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**new tracer-controlled milling machine  
assures accurate, cost-saving machining**

National has developed a unique three-dimensional milling machine with semi-automatic hydraulic operation. Tracer hydraulic control assures accurate duplication of any contour or dimension provided by a template, profile outline or previously finished part. Special jobs up to 16 ft. x 4 ft. x 4 ft. can be set up quickly and easily, reducing milling time and cost.

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This tracer-controlled milling machine is another

example of how National is constantly improving and developing more efficient and economical steel processing facilities for western industries. For more information on the complete services and engineering skill available at National, call or write the address below. Or better yet, plan to visit the plant soon.



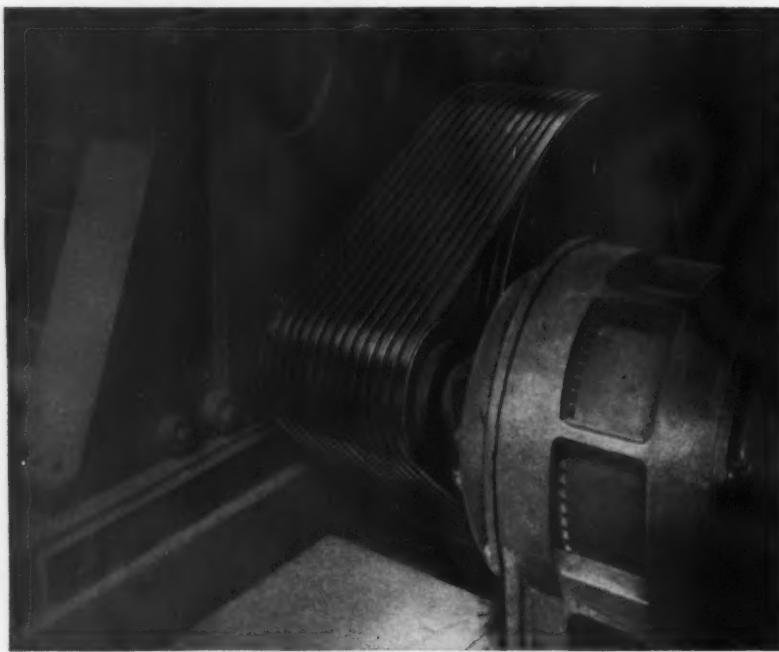
**THE  
NATIONAL SUPPLY  
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Torrance, California • Los Angeles Area**

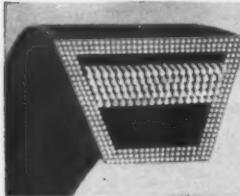
National Pressed Steel Forgings • Billets and Large Bars • Steel Castings and Special Machinery  
Melting • Forging • Casting • Machining • Heat Treating • Assembling • Welding • Testing

... for more details, circle No. 27 on Reader Service Postcard

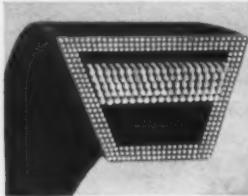
# Are you using the right QUAKER V-BELT?



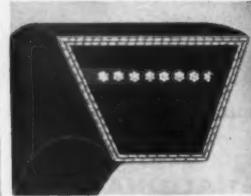
Quaker Rubber Division offers a full line of tough, long-lasting V-Belts. Each is designed to give long, efficient service. And each is designed to do a specific job. For example . . .



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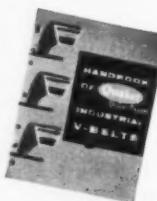
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**H. K. PORTER COMPANY, INC.**

QUAKER RUBBER DIVISION

... for more details, circle No. 28 on Reader Service Postcard



## Self-aligning roller bearings

This eight-page specification book illustrates and describes three types of self-aligning roller bearings: adjustable single row angular contact, adjustable double-row angular contact, and pre-adjusted double-row self-aligning angular contact roller bearings. Each is introduced briefly at the start of the book, then followed by engineering and selection data. Charts give dimensions, ring fitting practices. *Link-Belt Co.*  
... for your copy, circle No. 254

## Introduction to Ryterex bearings

Introducing plastic as material for bearings is this 14-page manual, which tells you how plastic is made, what the different grades are, special characteristics and shapes and how to work with it. A special section details plastic bearings used in industry. You can discover characteristics and properties of plastic bearings by glancing at a two-page chart in the center of the book. *Joseph T. Ryerson & Son, Inc.*

... for your copy, circle No. 255

## Needle bearing just for thrust

General design, including retainer construction, cross section, bore and o.d., is discussed in this four-page leaflet on needle thrust bearings, available in four sizes. Installation, lubrication and load capacity are all covered in text, while tables handle dimensions, weight and capacity. *Torrington Co.*

... for your copy, circle No. 256

## Mill bearings for shafts up to 11 in.

Specifically designed for heavy loads and severe impacts, this line of mill bearings for shafts up to 11 in. in diameter is covered in an eight-page leaflet. It contains cutaway drawings and complete tables of dimensions and ratings for these bearings, as well as application and product pictures. *Link-Belt Co.*

... for your copy, circle No. 257

## Condensed view of bearings, blocks

This eight-page sheet gives a condensed view of bearings and pillow blocks as well as related items in the firm's line of power transmission equipment. Covered here in the bearing field are ball, roller and sleeve types. About 25 are pictured and described briefly. *Dodge Mfg. Corp.*

... for your copy, circle No. 258

## Notes on instrument ball bearings

Ball bearings specifically designed for use in instruments are detailed in this 12-page notebook which covers sizes and types available. Each is illustrated with line drawings, while dimensions and tolerances are given in tabular form. Two interchangeability tables are included. *Marlin-Rockwell Corp.*

... for your copy, circle No. 259

## Manual on Spher-Align pillow block

The most recent addition to this firm's line of mounted bearings is the Spher-Align pillow block, covered in this eight-page manual. Complete with photographs and engineering drawings, the booklet contains tabulated data on dimensions, shaft sizes, weights and radial load ratings. It explains Micro-Mount, points out special features of the bearings and industrial applications for pillow blocks of ball, roller and sleeve bearing types. *Dodge Mfg. Corp.*

... for your copy, circle No. 260

#### 80 pages on Dodge bearings

Here's a comprehensive catalog on Dodge's complete line of industrial bearings, including pillow blocks, flange bearings, hanger bearings, bearing units and take-ups. Divided into sections and indexed, the book has many photographs, some used to point out special bearing features and others showing many applications. Technical data are covered in tabular form simplify selection of bearings for shaft sizes, speeds and loads. *Dodge Mfg. Corp.*

... for your copy, circle No. 261

#### Data on drawn cup roller bearings

A six-page fold-out introduces drawn cup roller bearings, opening with advantages and pictures of the bearings in different sizes. Design features, installation facts, lubrication and load capacities are all included in sections, while dimensions, weight and capacity are presented in table form. *Torrington Co.*

... for your copy, circle No. 262

#### Facts on Glyco metal for bearings

Opening with a discussion of the six advantages of Glyco metal for bearings, this four-page manual details the five special types of metal available, includes a hardness chart which compares Glyco to tin alloys, and tells how to pour good metal bearings. *Joseph T. Ryerson & Son, Inc.*

... for your copy, circle No. 263

#### Maximum thrust bearings

The 9000 series bearings, which are two-directional maximum thrust capacity units requiring little space, are explained in this four-page leaflet. Five units in the series are illustrated in line drawings and explained briefly. One full page is devoted to size, bore, diameter, width, radius and thrust capacity in chart form, while the final page covers tandem mounting. *Marlin-Rockwell Corp.*

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#### Applications for steel shaft collars

Common applications for steel shaft collars, including those on movie equipment, industrial machinery, printing presses, and material handling equipment, are shown in a four-page leaflet. Construction details are included, plus specifications, photographs and lists of special features. *Standard Pressed Steel Co.*

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#### Ball bearings for aircraft control

Airframe ball bearings for aircraft control applications are detailed in a notebook insert which includes dimensions and tolerances for rod-end bearings, bell crank units, torque-tube bearings and other similar bearing types. Charts and drawings supplement text. *Marlin-Rockwell Corp.*

... for your copy, circle No. 266

#### 128 pages on ball, roller bearings

You'll find everything you want to know about ball and roller bearings in this complete 128-page catalog, which opens with a brief description of the complete line, then points out special features of each unit on a full-page picture. Engineering data are given for pillow blocks, flanged blocks, and take-up blocks of varying types. A special section discusses selection, maintenance and lubrication of bearings. *Link-Belt Co.*

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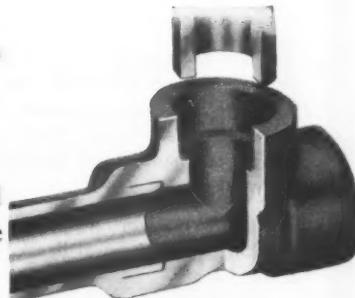
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1957

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So in August, we started an expansion program which has added 15% to our space, and will increase our manufacturing capacity from 20% to 25%. New equipment has been installed, and plant re-arranging is in progress.

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### Technical manual on bronze bearings

Sleeve, flange and thrust bearings in bronze are all treated in this two-color, 20-page technical booklet. Almost all information on the self-lubricating bearings is in chart form for quick reference. Cored, bar and plate stock is detailed and a part number index included. Several pages at the back of the book contain engineering data. *Amplex Div., Chrysler Corp.*

... for your copy, circle No. 268

### Notebook of ball bearing charts

Composed almost entirely of informational charts on miniature ball bearings, this 22-page notebook covers bar size, dimensions in inches, numbering systems, bearing applications, load ratings, limiting speed and mounting procedures. Among types of bearings treated are the radial retainer series, flanged radial retainer, high speed and flanged high speed, pivot, angular contact and thrust. *Miniature Precision Bearings, Inc.*

... for your copy, circle No. 269

### 64-page loose-leaf notebook on ball units

Here's a loose-leaf notebook, plastic bound, that gives very complete information on ball bearing units that are permanently sealed, pre-lubricated, self-aligning and zone hardened. An alphabetical table of contents serves as a quick selector for the unit you want information on, and covers everything from assembly-double lock bearings to weight of steel shafting. All units are pictured and described, then followed with engineering data. *Sealmaster Bearings Div., Stephens-Adamson Mfg. Co.*

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### Tri-Ply-Seal ball bearings for disc use

Designed for use with disc implements, the Tri-Ply-Seal ball bearing is shown in a full-page photograph with special features pointed out. This four-page leaflet also lists dimensions, typical applications of the bearings, and an explanation of the operation dust box. *Fafnir Bearing Co.* ... for your copy, circle No. 271

### All about National Bearing's facilities

Research, engineering and production facilities of National Bearing division are described in this 24-page book, which takes you from engineering conception to finished product in pictures, and text. In the book's section about the firm's product are two pages on bearings with large photographs and brief description of several different types. A two-page chart on alloys is also included. *National Bearing Div., American Brake Shoe Co.*

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### 110 pages on pillow blocks and bearings

Included in SKF's complete 110-page manual are pillow blocks, unit mountings, ball and roller bearings, locknuts, lockwashers, and removable sleeves, all presented in individual sections. Products are pictured and diagrammed; each is accompanied with pertinent technical data. Dimension tables are included. *SKF Industries, Inc.*

... for your copy, circle No. 273

### All you want to know about split bearings

Why use a split bearing? What is it? What are its advantages? These questions and many more are answered in this 24-page book containing just about everything you'll need to know about split bearings. It explains the difference between split bearings and those generally confused with them, talks about load capacities, design limitations, mounting, fracturing. Charts, diagrams, and photographs give and illustrate pertinent information. *Split Ball Bearing Div., MPB, Inc.*

... for your copy, circle No. 274

### Ball bearing pillow block technical data

A 10-page booklet devoted to technical data on ball bearing pillow blocks pictures many units and points out special features. Dimensions, load ratings and interchange data are presented in chart form. Book concludes with engineering data and mounting instructions. *New Department Div., General Motors Corp.*

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### Fold-out on wide inner ring ball bearings

This six-page introductory fold-out pictures and describes the Plya-Seal wide inner ring ball bearings. Dimension drawings, load rating tables and a combined load formula are included, plus an illustrated list of the advantages of the inner ring units. The firm's self-locking collar is illustrated also. *Fafnir Bearing Co.*

... for your copy, circle No. 276

### Technical book on spherical roller bearings

Spherical roller bearings with improved internal design are explained in this booklet. Improved design is compared with the original design in charts on capacity and length of life of bearings. Dimension tables are given for the new bearings along with a table of C/P values. *SKF Industries, Inc.*

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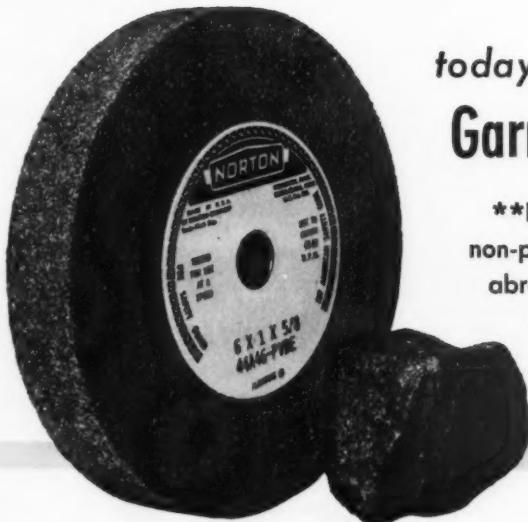
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### Correct service procedure for ball bearings

An explanation of bearing types opens this manual on ball bearing service procedure. Well illustrated throughout, the manual covers storing and handling, removal, cleaning, inspection, mounting, parts on shaft extensions, front wheel bearing servicing and lubricants, in that order. Right and wrong methods are both illustrated and explained. *New Departure Div., General Motors Corp.* . . . for your copy, circle No. 278

### Fact book on precision jewel bearings

Miniature precision jewel bearings for use in low torque instruments and control devices are the subject of this notebook, with facts on properties of jewel bearing materials, selection factors, assemblies, setting tolerances and many different types of jewels. It presents inspection, cleaning and packaging data plus a discussion and chart on bearing sizes. *Richard H. Bird & Co., Inc.* . . . for your copy, circle No. 279

### Guide book for thrust and journal bearings

The 36 pages of this guide book cover principles, designs and applications of thrust and journal bearings. Following an introduction about the Kingsbury bearing principle, the book lists the advantages of thrust and journal bearings, suggests fields of use and then gives detailed information on the units. The book was designed as a guide for those who want general information on bearings and specific information for different fields of use. *Kingsbury Machine Works, Inc.* . . . for your copy, circle No. 280

### Loose-leaf, formed-bushing design guide

A 25-page plastic-bound, loose-leaf, formed-bushing design guide, compiled to assist in selecting materials for and the designing of bushings, is divided into parts and indexed. Parts 1 and 2 cover materials and standard sizes, while Part 3 on design and manufacturing data includes grooves, holes, cut-outs, seams, chamfers and ball indentations. Part 4 deals with typical applications—camshaft, brake and clutch pedal, rocker arm, electric motor, piston pin, and automatic transmission—while the final part is devoted to specialty applications. Illustrated with photographs and drawings, the book also contains charts. *Federal-Mogul Div., Federal-Mogul-Bower Bearings, Inc.* . . . for your copy, circle No. 281

### Brochure on spherical bearings, rod ends

Design features open this booklet on spherical bearings and rod ends, along with information on special applications of the units. Data on several series are included—a standard series for aircraft and industry use, a corrosion-resistant series, commercial series, and heavy-duty and bellows-type, to name a few. Charts and diagrams are included. *Sealmaster Bearing Div., Stephens-Adamson Mfg. Co.* . . . for your copy, circle No. 282

### Catalog of standard stock bronze bearings

This 36-page handy reference book lists the complete standard stock of Kingwell bronze bearings, opening with a five-page size list in chart form. A size list for Oilite bearings is also included, along with a list of advantages—metallurgical and mechanical—and information on composition of the bearings. *Kingwell Bros., Ltd.* . . . for your copy, circle No. 283

### Technical bulletins on nylon bearings

Here are 13 technical bulletins on nylon and nylon bearings. All punched for notebook insertions, they describe advantages of nylon for bearings, discuss friction, design, strength, fabricating and machining. Physical property charts and graphs also contain a great deal of data. Well illustrated with photographs. *Polymer Corp. of Pennsylvania* . . . for your copy, circle No. 284

### Technical data on pillow blocks, housings

This 12-page manual opens with a brief introduction to the eight units in this line of pillow blocks and flanged housings, picturing and describing each. The manual continues on to treat each individually with specifications and diagrams, plus a load rating chart. *SKF Industries, Inc.* . . . for your copy, circle No. 285

### Complete series of split roller bearings

A 20-page picture and specification book discusses advantages, construction features, housing and assembly of split roller bearings. Included are expansion types, fixed types, pillow blocks and cartridge units. How to select the proper bearing is explained, as well as lubrication procedures and sealing. Suggested application for split roller bearings round out the booklet. *Cooper Split Roller Bearing Corp.* . . . for your copy, circle No. 286

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WESTERN INDUSTRY—December 1957



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This Webb conveyor installation, processing RCA Colorama TV picture tubes, is a perfect example of what can be accomplished with modern conveying techniques. In addition to the obvious economies realized with mechanized materials movement, these five conveyors, totaling 2385 feet, have provided RCA with four important benefits:

1. **Save Production Time** . . . conveyors dip down at every work station to an efficient work level, bringing the material to the worker . . . minimizing manual handling.
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4. **Greater Employee Safety** . . . cleaner, uncluttered work areas because materials travel and are stored overhead.

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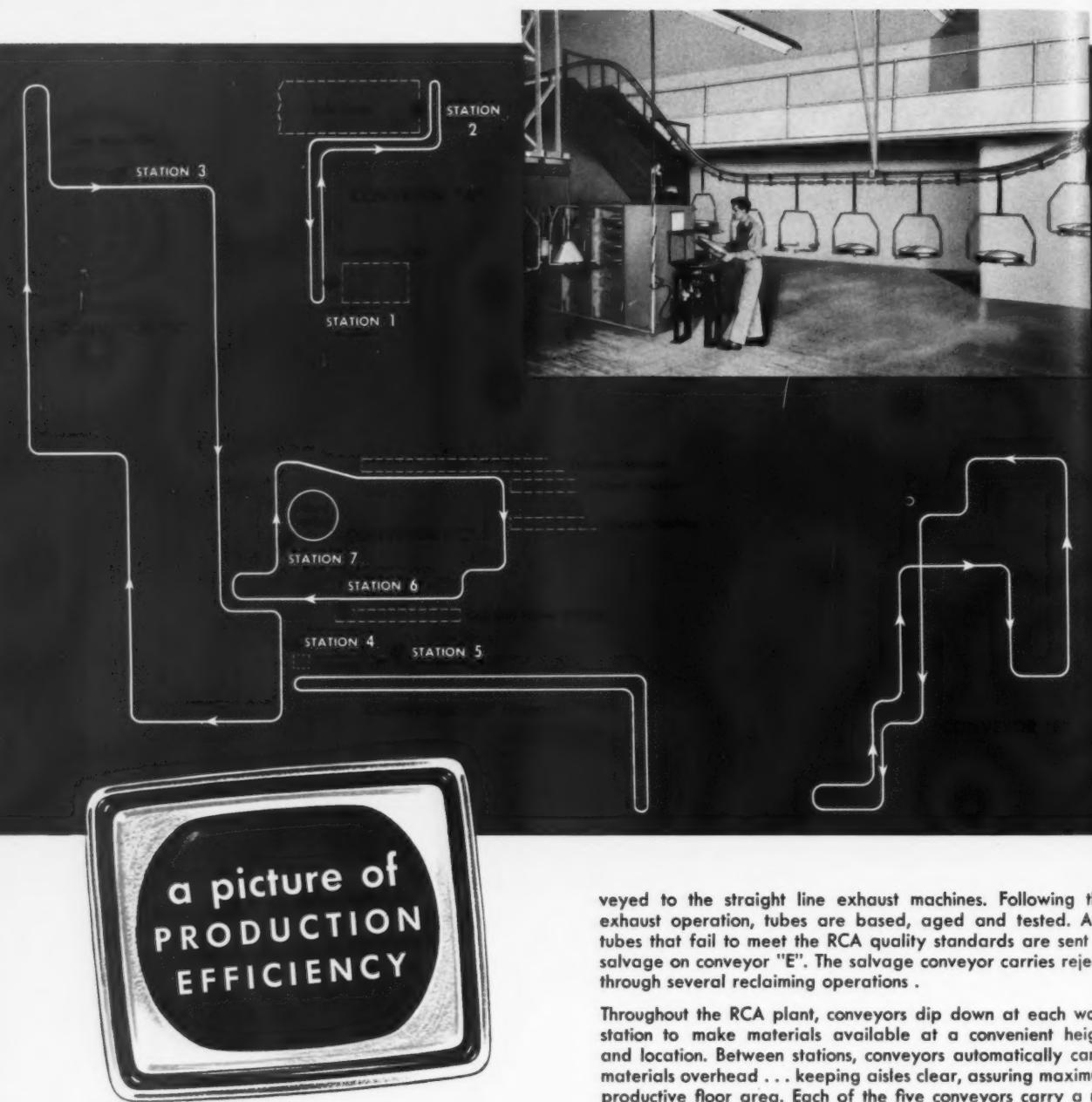


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# Webb Conveyors at RCA . . .



At the start of the RCA Colorama TV picture tube processing and assembly operations, the cap assemblies are taken from the aluminizing unit and placed on Webb trolley conveyor "A" at station 1. This conveyor transports the caps automatically to station 2 where they are removed and placed in a Lehr bake-out oven. After traveling through the oven, caps are inspected and placed on conveyor "B" at station 3.

The caps are then automatically carried overhead to station 4 where they are placed on a vibrator (see photo above) before being welded to funnel assemblies at station 5. Funnel assemblies are processed along the route of conveyor "D". After welding, the assemblies are placed on conveyor "C" at station 6 and carried to the mount sealing machine at station 7. This machine automatically seals the electron gun in the bulb. Several assemblies at one time rotate merry-go-round fashion in the sealing machine fixture.

Tube assemblies are again placed on conveyor "C" and con-

veyed to the straight line exhaust machines. Following the exhaust operation, tubes are basted, aged and tested. Any tubes that fail to meet the RCA quality standards are sent to salvage on conveyor "E". The salvage conveyor carries rejects through several reclaiming operations.

Throughout the RCA plant, conveyors dip down at each work station to make materials available at a convenient height and location. Between stations, conveyors automatically carry materials overhead . . . keeping aisles clear, assuring maximum productive floor area. Each of the five conveyors carry a re-circulating inventory of parts, thus keeping parts storage overhead.

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# HELPFUL LITERATURE

for the West's plant  
operating executives

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## 180-page pocket size welding data book

Simplified welding procedures for every base metal are given in this 180-page welding data pocket book. This 1958 edition covers 120 welding rods, electrodes and welding compounds. A guide to improved torch and metallic arc welding, brazing and soldering, it gives how-to-weld information for fabrication, maintenance, repair and salvage, overlaying for wear and corrosion resistance and welding of dirty, rusted parts. Special welding applications such as joints with high electrical conductivity, resistance to chemicals, tinning and plating are all covered. Also included is information on best torch adjustments, electrode position and manipulation and correct fluxes. *Eutectic Welding Alloys Corp.*

... for your copy, circle No. 151

## Manual on 67 high vacuum valves, baffles, traps

A comprehensive line of valves, baffles and traps to meet most any need from low vacuum to ultra regions of 10-14 mm. Hg. is covered in this 26-page manual. The first section on valves includes gate valves, quarter-swing, right-angle, glove and ultra high vacuum units. A second section on baffles includes water-cooled, freon-cooled and liquid nitrogen-cooled types, while the section on traps covers glass, copper foil and dust types. An additional section on a combination valve and baffle is included. *Consolidated Electrodynamics Corp.*

... for your copy, circle No. 152

## Wall chart of engineering conversion factors

This wall chart of conversion factors, which makes a handy reference table for engineers, includes common conversions such as inches to centimeters and watts to hp., as well as many conversions that are hard to locate in reference manuals. For example, atmosphere to kgs./sq. cm., or cm./sec. to mls./hr and microns to meters. *Precision Equipment Co.*

... for your copy, circle No. 153

## 50-page application book on steam turbine-generators

Design features and applications of medium capacity steam turbine-generator units make up this 50-page, two-color book. Included is data on condensing turbines utilizing either non-reheat or reheat; noncondensing turbines; single, double and triple automatic extraction turbines; admission units, and admission-extraction steam turbines. A special seven-page section covers the governing system employed on the turbines, while photographs show assembly operations. Two monographs help in calculating approximate steam rates for both condensing and noncondensing units. *General Electric Co.*

... for your copy, circle No. 154

## Seven case studies of MH equipment at work

Production, storage and shipping problems solved with material handling equipment are the subject of these case studies, most of which are four pages long. Furniture, instrument, casting, chemical, rubber and paper producers cooperated in giving information for these case histories which are all illustrated with photographs taken in the plants. Equipment involved includes hand and electric lift trucks, walkie trucks and industrial truck attachments. *Lewis-Shepard Products Inc.*

... for your copy, circle No. 155

## Source book on grinding for tool room men

Designed to assist tool room men in obtaining maximum tool performance through an understanding of abrasives and how they work, this 24-page book covers many areas in the field with text, pictures and charts. Called "Tool Room Grinding of Alloy, High-Speed, and Die Steels," its sections cover aluminum oxide abrasives, wheel shapes and markings, offhand grinding, tap sharpening, cutoff and slotting, cylindrical grinding, and mounted wheels, to name just a few. Quick reference charts are included. *Carborundum Co.*

... for your copy, circle No. 156

## Case history booklet on steel bar and wire

A 16-page case history type booklet tells how manufacturers can improve product design and performance by using stainless steel bar and wire. Applications covered include serrated dials, high pressure safety valves, stacker springs, hydraulic pump shafts and valve plugs. Descriptions and properties of the precipitation hardening steels are also given. The booklet is well illustrated. *Armeo Steel Corp.*

... for your copy, circle No. 157

## Basic information about meters for L. P. Gas

A special feature of this eight-page booklet on L. P. Gas meters is a two-page explanation, illustrated with drawings, of Rockwell's dispensing system and how it was designed to insure that the butane, propane and mixtures remain in a liquid state throughout metering. Basic elements in the liquid metering systems are shown in position, and a drawing of a typical vapor manifold arrangement for an L. P. Gas system is included. *Meter & Valve Div., Rockwell Mfg. Co.*

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## 108-page V-belt drive engineering manual

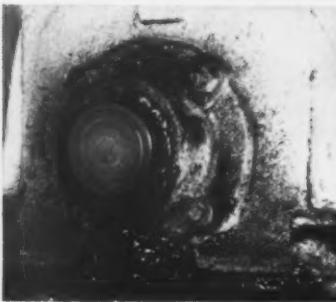
This comprehensive manual for solving power transmission problems is packed with information on selection and operation of V-belt drives. Arranged in sections for easy reference, its 108 pages cover standard, variable speed and special drives, taper-lock sheaves, sealed-life V-belts and taper-lock bushings and hubs. The book abounds in product and installation photographs, as well as engineering drawings and exploded views illustrating technical aspects. Quick selection of a complete drive is possible by using the tables of pre-engineered drives. Other tables give horsepower capacities, belt speeds, center distances, sheave diameters and other data where special drives are required. Indexed. *Dodge Mfg. Corp.*

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**Magazine contrasts old—  
new MH techniques**

The September edition of *Handling Materials Illustrated* contains a number of photo-stories which outline material handling problems and their solution, in each case comparing old and new material handling techniques. Specific cost-cutting advantages derived by the various companies in the articles through conversion to improved handling methods are given and other benefits described. A special section covers a stop-watch test demonstrating speedy accessibility provided by Towmotor lift trucks. *Towmotor Corp.*

... for your copy, circle No. 160

**Data book on advantages  
of steam atmosphere method**

The Homo method of steam atmosphere heat treating and its effect on such metals as steel, iron, brass and bronze, aluminum and copper are covered in this 20-page data book. Divided into sections by the heat treatment's advantages with different metals, the book is thoroughly illustrated. *Leeds & Northrup Co.*

... for your copy, circle No. 161

**40-page guide book  
to worm gear reducers**

Eleven series of worm gear speed reducers, with horsepower ranging from less than .1 to 121, are treated in this 40-page book. The sections on each reducer contain tables of standard ratios and dimension drawings and data. Following an introduction, the booklet gives general specifications, lists types of worm gear reducers available, and includes application facts and selection procedure. *Hewitt-Robins Inc.*

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**Notebook on casters and  
wheeled handling equipment**

Some 10,000 industrial and institutional casters and 500 different types of wheeled handling equipment are described in this four-color notebook which comes in a plastic coil binder. Products have been classified into four major areas, each indicated by a color code. For example, yellow pages indicate all types of casters, while other colors denote commercial trucks and industrial equipment. Completely indexed. *Colson Corp.*

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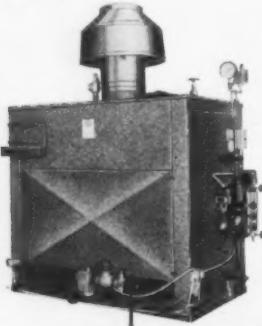
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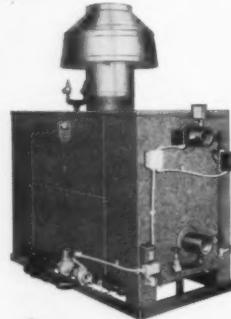
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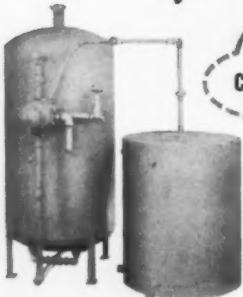


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Softens water the most economical and simplest way. Low initial cost — durably constructed for longer life. Engineered for proper distribution and efficient back-wash to cut water and salt consumption to a minimum. Equipped with the best solo valve for reliable and easy operation.

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### PARKER AUTOMATIC RETURN SYSTEMS

The Parker Packaged Return System provides fully automatic and reliable operation for boiler feed and condensate storage. Overhead system is compact, fully assembled for easy installation. Heavy duty piston or turbine pump — heavy steel tanks with automatic float valve. Durably built for longer life.

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... for more details, circle No. 36 on Reader Service Postcard

### Five steel floorings at a glance

An eight-page booklet on steel flooring gives you a glimpse at five different types for just about every purpose. Two open floorings, Morton Kass treads, safety plate and expanded grating are included, along with tables of safe loads and engineering data. All floorings, recommended for stairs, steps, ramps, catwalks and platforms, are pictured, while construction advantages and fastening methods round out the booklet. *Joseph T. Ryerson & Son, Inc.*

... for your copy, circle No. 164

### How to speed framing with slotted angle

A high speed framing system for building repeating pattern structures with slotted angle is the subject of this four-page brochure. Step by step procedures are completely illustrated and supplemented by text. The booklet recommends the high speed framing system for shelving, racks, tables and platforms. *Acme Steel Co.*

... for your copy, circle No. 165

### Facts on interfloor unitized load conveying

This four-page sheet on automatic interfloor conveying systems for unitized loads covers pallets, tote bins, bales, drums, paper rolls, textile beams, cartons and other packaged units. Speed, safety and special transfer features of the automatic systems are explained, while nine photographs show the equipment in operation in a variety of industrial plants. Four schematic drawings indicate the way various elements can be combined into a single system to solve special problems. *Gifford-Wood Co.*

... for your copy, circle No. 166



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... for more details, circle No. 104

### Companion brochures on electric lift truck

Two brochures, one covering specifications and drawings and the other a pictorial description, are available on the Elbo-lift, an electric fork lift truck. Specification and performance data for four models along with top and side line drawings complete the first brochure, while action photographs and parts pictures in the second give a good idea of the lift. *Automatic Transportation Co.*

... for your copy, circle No. 167

### Technical reference sheet for hydraulic lubricator

The Cyclic Y lubricator, a hydraulically operated unit, is completely detailed in this technical reference sheet, which describes the lubricator and explains its operating mechanism. Two charts, a photograph and line drawing of the lubricator are included with information on discharge and strokes per cycle. *Bijur Lubricating Corp.*

... for your copy, circle No. 168

### Book and movie list covers gases, welding, cutting

In this audio visual and publication list is an assortment of literature and films on industrial gases, welding and cutting processes, and products. Each booklet and film is described, and instructions on how to obtain it included. Publications cover applications of industrial gases, and welding and cutting techniques, while the motion pictures show latest developments in the field. *Air Reduction Pacific Co.*

... for your copy, circle No. 169

### Brochure of specifications for die set pins, bushings

This eight-page brochure describes a complete line of guide pins, shoulder guide pins and bushings, and commercial guide pins and bushings, giving specifications and list prices for each. Charts and data are well arranged for quick reference. *E. W. Bliss Co.*

... for your copy, circle No. 170

### Product picture book on steel shop equipment

Work benches, tool stands, shelving and other steel equipment for shop, laboratory or assembly line use are illustrated and detailed in this eight-page leaflet. Construction features and specifications accompany each piece of equipment pictured, as well as mention of the variations offered. *Standard Pressed Steel Co.*

... for your copy, circle No. 171

# NEED A CYLINDER?

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For normal applications requiring standard cylinders

or for those unusual applications where a

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Let us know the type of job to be done and how much cylinder power you need. Send for this handy cylinder capacity chart.

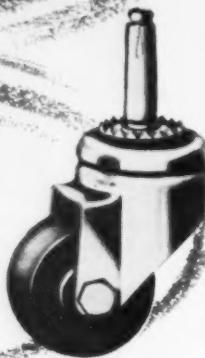
Ledeen CYLINDER CAPACITIES													
No. of Cylinders	CAPACITY OF CYLINDERS FOR VARIOUS PRESSURES, LBS. PER SQUARE INCH												
	10	15	20	25	30	35	40	45	50	55	60	65	70
1"	100	150	200	250	300	350	400	450	500	550	600	650	700
2"	150	220	280	340	400	460	520	580	640	700	760	820	880
3"	220	310	390	470	550	630	710	790	870	950	1030	1110	1190
4"	310	420	520	620	720	820	920	1020	1120	1220	1320	1420	1520
5"	420	550	680	810	940	1070	1200	1330	1460	1590	1720	1850	1980
6"	550	700	850	1000	1150	1300	1450	1600	1750	1900	2050	2200	2350
7"	700	880	1070	1260	1450	1640	1830	2020	2210	2400	2590	2780	2970
8"	880	1100	1320	1540	1760	1980	2200	2420	2640	2860	3080	3300	3520
9"	1100	1350	1620	1900	2180	2460	2740	3020	3300	3580	3860	4140	4420
10"	1350	1650	2000	2350	2700	3050	3400	3750	4100	4450	4800	5150	5500
11"	1650	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000	6400
12"	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000	6400	6800
13"	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000	6400	6800	7200
14"	2800	3200	3600	4000	4400	4800	5200	5600	6000	6400	6800	7200	7600
15"	3200	3600	4000	4400	4800	5200	5600	6000	6400	6800	7200	7600	8000
16"	3600	4000	4400	4800	5200	5600	6000	6400	6800	7200	7600	8000	8400
17"	4000	4400	4800	5200	5600	6000	6400	6800	7200	7600	8000	8400	8800
18"	4400	4800	5200	5600	6000	6400	6800	7200	7600	8000	8400	8800	9200
19"	4800	5200	5600	6000	6400	6800	7200	7600	8000	8400	8800	9200	9600
20"	5200	5600	6000	6400	6800	7200	7600	8000	8400	8800	9200	9600	10000
21"	5600	6000	6400	6800	7200	7600	8000	8400	8800	9200	9600	10000	10400
22"	6000	6400	6800	7200	7600	8000	8400	8800	9200	9600	10000	10400	10800
23"	6400	6800	7200	7600	8000	8400	8800	9200	9600	10000	10400	10800	11200
24"	6800	7200	7600	8000	8400	8800	9200	9600	10000	10400	10800	11200	11600
25"	7200	7600	8000	8400	8800	9200	9600	10000	10400	10800	11200	11600	12000
26"	7600	8000	8400	8800	9200	9600	10000	10400	10800	11200	11600	12000	12400
27"	8000	8400	8800	9200	9600	10000	10400	10800	11200	11600	12000	12400	12800
28"	8400	8800	9200	9600	10000	10400	10800	11200	11600	12000	12400	12800	13200
29"	8800	9200	9600	10000	10400	10800	11200	11600	12000	12400	12800	13200	13600
30"	9200	9600	10000	10400	10800	11200	11600	12000	12400	12800	13200	13600	14000
31"	9600	10000	10400	10800	11200	11600	12000	12400	12800	13200	13600	14000	14400
32"	10000	10400	10800	11200	11600	12000	12400	12800	13200	13600	14000	14400	14800
33"	10400	10800	11200	11600	12000	12400	12800	13200	13600	14000	14400	14800	15200
34"	10800	11200	11600	12000	12400	12800	13200	13600	14000	14400	14800	15200	15600
35"	11200	11600	12000	12400	12800	13200	13600	14000	14400	14800	15200	15600	16000
36"	11600	12000	12400	12800	13200	13600	14000	14400	14800	15200	15600	16000	16400
37"	12000	12400	12800	13200	13600	14000	14400	14800	15200	15600	16000	16400	16800
38"	12400	12800	13200	13600	14000	14400	14800	15200	15600	16000	16400	16800	17200
39"	12800	13200	13600	14000	14400	14800	15200	15600	16000	16400	16800	17200	17600
40"	13200	13600	14000	14400	14800	15200	15600	16000	16400	16800	17200	17600	18000
41"	13600	14000	14400	14800	15200	15600	16000	16400	16800	17200	17600	18000	18400
42"	14000	14400	14800	15200	15600	16000	16400	16800	17200	17600	18000	18400	18800
43"	14400	14800	15200	15600	16000	16400	16800	17200	17600	18000	18400	18800	19200
44"	14800	15200	15600	16000	16400	16800	17200	17600	18000	18400	18800	19200	19600
45"	15200	15600	16000	16400	16800	17200	17600	18000	18400	18800	19200	19600	20000
46"	15600	16000	16400	16800	17200	17600	18000	18400	18800	19200	19600	20000	20400
47"	16000	16400	16800	17200	17600	18000	18400	18800	19200	19600	20000	20400	20800
48"	16400	16800	17200	17600	18000	18400	18800	19200	19600	20000	20400	20800	21200
49"	16800	17200	17600	18000	18400	18800	19200	19600	20000	20400	20800	21200	21600
50"	17200	17600	18000	18400	18800	19200	19600	20000	20400	20800	21200	21600	22000
51"	17600	18000	18400	18800	19200	19600	20000	20400	20800	21200	21600	22000	22400
52"	18000	18400	18800	19200	19600	20000	20400	20800	21200	21600	22000	22400	22800
53"	18400	18800	19200	19600	20000	20400	20800	21200	21600	22000	22400	22800	23200
54"	18800	19200	19600	20000	20400	20800	21200	21600	22000	22400	22800	23200	23600
55"	19200	19600	20000	20400	20800	21200	21600	22000	22400	22800	23200	23600	24000
56"	19600	20000	20400	20800	21200	21600	22000	22400	22800	23200	23600	24000	24400
57"	20000	20400	20800	21200	21600	22000	22400	22800	23200	23600	24000	24400	24800
58"	20400	20800	21200	21600	22000	22400	22800	23200	23600	24000	24400	24800	25200
59"	20800	21200	21600	22000	22400	22800	23200	23600	24000	24400	24800	25200	25600
60"	21200	21600	22000	22400	22800	23200	23600	24000	24400	24800	25200	25600	26000
61"	21600	22000	22400	22800	23200	23600	24000	24400	24800	25200	25600	26000	26400
62"	22000	22400	22800	23200	23600	24000	24400	24800	25200	25600	26000	26400	26800
63"	22400	22800	23200	23600	24000	24400	24800	25200	25600	26000	26400	26800	27200
64"	22800	23200	23600	24000	24400	24800	25200	25600	26000	26400	26800	27200	27600
65"	23200	23600	24000	24400	24800	25200	25600	26000	26400	26800	27200	27600	28000
66"	23600	24000	24400	24800	25200	25600	26000	26400	26800	27200	27600	28000	28400
67"	24000	24400	24800	25200	25600	26000	26400	26800	27200	27600	28000	28400	28800
68"	24400	24800	25200	25600	26000	26400	26800	27200	27600	28000	28400	28800	29200
69"	24800	25200	25600	26000	26400	26800	27200	27600	28000	28400	28800	29200	29600
70"	25200	25600	26000	26400	26800	27200	27600	28000	28400	28800	29200	29600	30000
71"	25600	26000	26400	26800	27200	27600	28000	28400	28800	29200	2		

# Job Rated

...for load capacities  
...for floor conditions  
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## Casters for Furniture

267 kinds, sizes and styles of quiet, easy rolling, durable casters are available. Wide selection of stems and mountings for every kind of metal and wood construction. Load capacities range from 75 to 200 lbs., per caster. Hard rubber or cushion tread wheels protect floors.



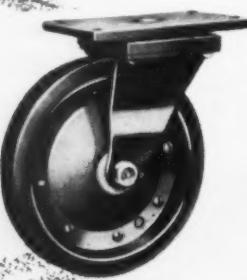
## Casters for Equipment

319 kinds and sizes of swivel and rigid casters assure smooth rolling and long life under heavy loads. You can select stems and top plates to suit the construction of your equipment. A variety of wheel types are available for every floor condition. Load capacities per caster range from 75 to 500 lbs.



## Casters for Machinery

132 kinds and sizes of swivel and rigid models to give you a complete selection of rugged, trouble-free, easy rolling casters. Steel, aluminum and plastic wheels with hard or cushion treads. Pneumatic and semi-pneumatic tires available on some models. Load capacities range from 220 to 1500 lbs., per caster.



The World's  
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Kinds, Types and Sizes

... for more details, circle No. 38 on Reader Service Postcard

## Specs and operation data on triple stage upright

This eight-page fold-out brochure gives specifications and describes the operation of Clark's triple stage upright for fork trucks. Photographs show the three-section, telescoping upright in action, while a dimension table for the 11 standard sizes shows what overall height of the upright will be when forks are at any height from 15 to 216 in. *Clark Equipment Co.*

... for your copy, circle No. 172

## Plastic-coated chart for thermocouples, extensions

Printed in two colors on heavy card stock and plastic laminated for wear resistance, this 8 1/2 x 11-in. chart contains color codes and calibration symbols for thermocouples and thermocouple extension wires, plus pyrometer wire resistance figures. Charted on one side are the thermocouple calibrations with corresponding ISA calibration symbols, Thermo Electric calibration symbols and ISA color codes. The chart also contains the color codes of all types of "Mil"-Spec wire. On the reverse side are resistance tables for standard pyrometer wires in ohms per 100 ft. at 68 deg. F. *Thermo Electric Co., Inc.*

... for your copy, circle No. 173

## Technical data book on industrial doors

Many different types of doors—steel frame, channel frame, galvanized sheet steel, corrugated metal, steel plate and wood, to mention a few—are illustrated and detailed in this 12-page data book. Specifications, installation facts, application photographs are all included, as well as a section on automatic electric door operators. *Industrial Door Div., Richards-Wilcox Mfg. Co.*

... for your copy, circle No. 174

## Specification sheet on industrial tractors

Engineering, design and construction features, along with operating data and specifications, make up this four-page sheet on two industrial towing tractors. Photographs illustrate the models while line drawings, graphs and other illustrations help tell the towing tractor story. *Buda Div., Allis-Chalmers Mfg. Co.*

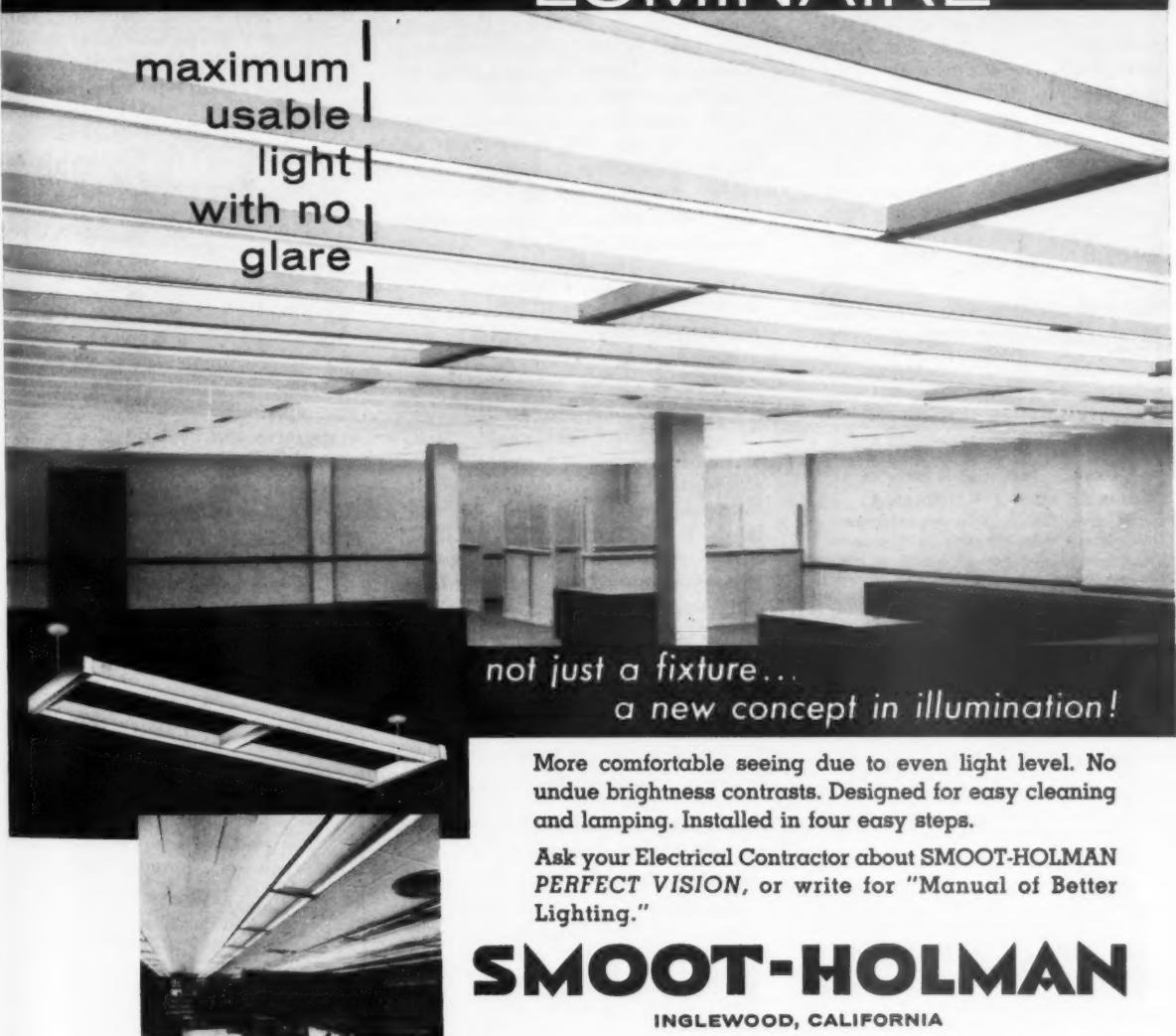
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maximum  
usable  
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a new concept in illumination!

More comfortable seeing due to even light level. No undue brightness contrasts. Designed for easy cleaning and lamping. Installed in four easy steps.

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"IT COSTS NO MORE TO GET THE BEST, IN MANY WAYS THE COST IS LESS!"

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*the answer to*

## WARPING EMBRITTLEMENT DISTORTION

Welding the ordinary fusion way, with its required high heats, can cause extreme expansion of the base metal. After cooling, chances are the metal will not return to its original shape...or strength.

With Eutectic's exclusive "Low Temperature Welding Alloys" and "Low Heat Input" method, high heats are no longer necessary for good welds. Using this revolutionary welding method a *surface alloy* is produced from the base metal and filler metal. This strong, tough bond is a result of the *diffusion* of the atoms of the base metal into the liquid "Low Temperature Alloy." With "Low Heat Input" the base metal need never be brought to fusion temperature...avoiding high heat distortion, warping and embrittlement.

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Costly tools can be fabricated inexpensively in any shop with welding. Expensive dies, whether cast iron, cast steel or kirkite can be repaired quickly. This manual tells how.

#### CONSTRUCTION MAINTENANCE WELDING ISSUE (TIS 2832)

Keeping equipment moving is essential to any builder. Learn new techniques that assure longest, most efficient service life from construction machinery and tools.

#### FARM MAINTENANCE WELDING ISSUE (TIS 2837)

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... for more details, circle No. 40

60

### Difficult dock problems and how to solve them

Nine knotty problems encountered in every day dock loading operations are pictured and solved in this four-page leaflet. Covered are the high carrier-low dock situation, restricted turning space, narrow doors, equipment underclearance, and ground level loading. The two-color leaflet then shows the application of dock boards, mobile loading ramps and portable ramps to these problems. *Magline Inc.*

... for your copy, circle No. 176

### Book of case histories on dust control systems

"Dust and Fume Control" is a 16-page book of case histories on the use of dust control, air conveying systems and systems for the removal of noxious fumes or excess heat in various industries. Large photographs illustrate the systems' use for such jobs as wood working, grinding and buffing, metal finishing and spray painting. Dust and fume control systems from midget to giant size are illustrated along with means for future expansions. *Young & Bertke Co.*

... for your copy, circle No. 177

### Results of 4½-year test on acrylic emulsion paints

This 70-page book summarizes and tabulates results of 4½ years of testing of acrylic emulsion exterior paints in many climates. Text, photographs and extensive tables give the results obtained from 3,000 test exposures in Florida, Pennsylvania and Arizona, begun in 1952 and 1953. Data obtained from tests on a variety of laboratory-controlled test buildings and from a systematic study covering a large number of commercial paint applications on buildings throughout the United States and Canada are also included. The book concludes with a list of the advantages of Rhoplex AC-33, the acrylic paint tested. *Rohm & Haas Co.* ... for your copy, circle No. 178

### Advantages of holdbacks for conveyor operators

Designed to show conveyor and elevator operators the advantages of holdbacks in protecting personnel and equipment, this brochure covers the standard roller type, totally-enclosed type and the automatic ratchet and pawl. Specifications and illustrations are included. *Stephens-Adamson Mfg. Co.* ... for your copy, circle No. 179

### List of free-loan movies on mining, steel-making

This booklet lists and describes fourteen sound-color motion pictures available on a free loan basis. The 16-mm. movies, which run from 15 to 30 min. in length, are on mining, steelmaking and the manufacture of finished steel products. Four of the available films belong to the Indian Paint series which describes the first discovery of iron ore by the American Indian who used it for face paint. Other films cover strengthening of concrete with welded wire fabric, wire rope, manufacture of grader blades, steel products for farm and ranch, and other subjects. *Colorado Fuel & Iron Corp.*

... for your copy, circle No. 180

### "A World of New Uses for Pipe in Industry"

Application of ordinary pipe to industrial uses without threading, welding or using special tools is graphically presented in this booklet. It shows in detail how many special production fixtures can be quickly constructed from ordinary pipe by using a simple universal clamp. The booklet was designed to help those in charge of production and maintenance. *Tube-Strut Corp.* ... for your copy, circle No. 181

### Full-color picture book on distillation equipment

This eight-page booklet on water distillation equipment illustrates and describes the familiar vapor compression apparatus as well as the flash evaporator and centrifugal compression still. It lists models and capacities, giving approximate weight, space requirements and other pertinent data. Diagrammatic material and photographs are included. *Badger Mfg. Co.*

... for your copy, circle No. 182

### Behind closed doors at New York Air Brake

A four-page, two-color brochure takes you into the five divisions of New York Air Brake Co. telling a little bit about each division, what it makes and why. Discussed are the Watertown Division and its Stratopower pumps, Aurora Pump Division, Kalamazoo Division with its pumps and motors, Kinney Manufacturing and Vacuum Equipment Divisions. A small section of general information on the firm is included. *New York Air Brake Co.* ... for your copy, circle No. 183

WESTERN INDUSTRY—December 1957

For more details, adv. opp. pg., circle No. 41 on Reader Service Postcard ➤



# EUTECTIC Welding News

PUBLISHED BY EUTECTIC WELDING ALLOYS CORPORATION, 40-40 172 STREET, FLUSHING 58, NEW YORK, N. Y.

## CRACKED MOTOR BLOCKS NOW WELDED IN PLACE WITH "LOW AMP" XYRON 2-25

To overcome the difficulties of welding motor block cracks due to freeze or accident, "Eutectic" developed patented Xyron 2-25 (AC-DC), the all-position 'Frigid Arc' coated electrode for cast iron.

Xyron 2-25 (AC-DC) meets every requirement for use on cracked engine blocks. Machinable dense deposits can generally be made without preheating the oil soaked cast iron. Weld metal is free flowing and has exceptional affinity for cast iron. This is extremely advantageous when long or large deposits must be made as it minimizes the possibility of cracking or slag inclusion. The lower amperage permitted with all Eutectic "Low Temperature Welding Alloys" eliminates distortion, embrittlement, warpage and danger of fusion.



The result: a dense, smooth, crack free, machinable deposit without the necessity of preheating.

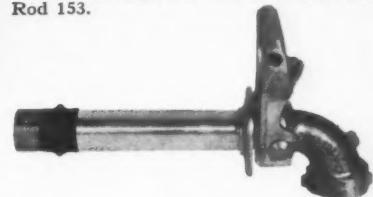


Use of all-position Xyron 2-25 (AC-DC) on cracked engine blocks eliminates the need for dismantling and extensive cleaning. Weld may be performed in position.

Because of its many specialized features, and because of its strength, (ultimate tensile strength of 56,000 psi), thousands of welders find it necessary to reach for Xyron 2-25 (AC-DC) when the job is a cracked engine block, transmissions, gear housing, cams, levers, machine bases and similar cast iron parts.

### ALUMINUM TO STEEL JOINT "INDESTRUCTIBLE"

An Iowa manufacturer of oil equipment wanted a lighter, stronger fill tube. A steel tube encased in an aluminum tube (except for the very tip) was to be welded to the valve apparatus, a casting of Almag 35 Aluminum. The manufacturer's Chief Research Engineer was told such a weld was impossible. His local "Eutectic" District Engineer recommended testing a procedure utilizing EutecRod 19 and EutecRod 153.



The valve casting was machined to permit a one-inch insertion of the steel tube. Joining would be done with EutecRod 19 — a self-fluxing, low-melting, solder-type alloy.

EutecRod 153 was chosen to "tin" the steel tube; it has a high affinity to EutecRod 19.

The tubes were cleaned and dipped in the molten EutecRod 153. The high remelt then enabled the insertion of the tube in the Almag casting, and the flow of EutecRod 19 through the joint without burning or reaching the oxidation point of the "tinned" surface on the steel tube. Subsequent destruction tests showed that the Almag casting was completely destroyed, or the steel tube was bent so badly that the part would have been unusable, and yet there was no rupture of the joint area.

## "LOW HEAT" OVERLAY SOLVES ABRASION PROBLEM

Rough, tough wear and abrasion weakened and finally snapped off flanges on this high-alloyed steel sand and gravel conveyor screw (figure 1). Abrasion also



(Fig. 1)

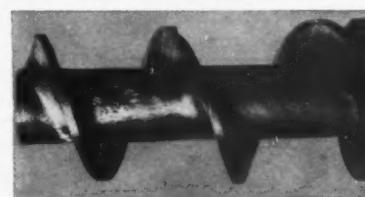
caused pitting and galling. This meant serious maintenance and downtime expenses to management—a West Virginia Mill.

Eutectic's local District Engineer was consulted, and suggested rebuilding the screw with EutecBor #9.

EutecBor #9 is a super-high alloy overlay specifically formulated for use where

severe abrasion is a problem. It is non-magnetic in nature and has a hardness as deposited of RC 55-62. EutecBor #9 is also extremely resistant to corrosion and has the added advantage of minimizing weld weakening dilution of the base metal. Deposits of this widely useful alloy accept a high polish and resist pitting and galling (figure 2).

Management now reports conveyor shaft stays in operation much longer without maintenance — effects a considerable savings in downtime and repair costs.



(Fig. 2)

### SEASON'S GREETINGS

With this issue, we come to the conclusion of the first year of publishing Eutectic Welding News. We trust the articles contained on these pages have proven to be of value. We will strive to continue presenting new cost and time saving ways of using "Low Temperature Welding Alloys."

As 1958 quickly approaches we wish to take this opportunity of extending to you Season's Greetings, and Best Wishes for a Happy and Prosperous New Year.



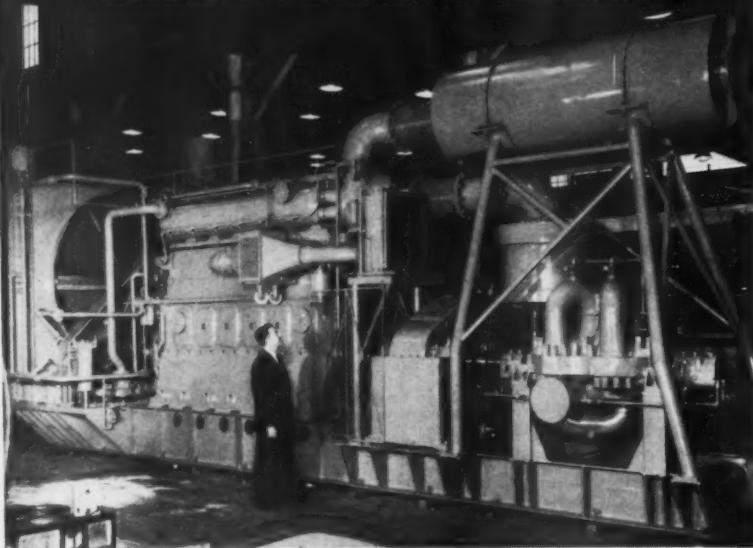
EUTECTIC WAREHOUSE—SERVICE CENTERS  
1108 Blake Street, Berkeley 2, Calif.  
5348 Jillson Street, Los Angeles 22, Calif.  
1414 South Street, Phoenix, Arizona

EUTECTIC WAREHOUSE—SERVICE CENTERS • 1108 BLAKE STREET, BERKELEY 2, CALIF.  
5348 JILLSON ST., LOS ANGELES 22, CALIF. • 1414 SOUTH ST., PHOENIX, ARIZONA



**"Selected for Dependability  
and Durability Necessary  
in Desolate Persian Gulf Outpost"**

**JOB-PROVED ROPERS**  
specified for 1000 hp pumping rigs



The Enterprise Model DSG-36 pumping unit shown above is one of four built for the pipeline pumping system in the Wafra oil fields north of Saudi Arabia.

To meet specifications, Enterprise, a division of General Metals Corporation, designed lube oil, fuel oil, air intake intercooling, and crude fuel heating systems which all fit into compact and completely portable units that withstand not only long hours of service, but the ever-changing weather conditions of desert operation.

An interesting feature is the economical fuel arrangement which permits the engine to burn the crude oil it is pumping, a system which has resulted in fuel savings as high as 90%. This is where Roper fits in. A Series H pump, selected for dependability and durability, is the heart of the fuel heating system, delivering 3 GPM of 220 SSU crude oil at 100° F. at pressures of 800 lbs.

Again, it's a case of job-proved Ropers meeting specifications and providing optimum efficiency. Roper can give you excellent results, too! *Send for catalog today!*

**Series H Features**

- Sizes 5 to 75 GPM . . . pressures to 1000 PSI
- Splined drive — drive shaft separate from drive gear absorbs thrust loads.
- Roller bearings and bronze wear plates, two on each side, reduce friction. Journal and bearing continuously lubricated by liquid pumped.
- Spur gears provide highest volumetric efficiency, and operate in axial hydraulic balance.
- One-piece backplate gasket-sealed against leakage, carries pipe connections, permits removal of internal parts without disturbing piping or drive.

**ROPER HYDRAULICS, INC.**

formerly  
Geo. D. Roper Corporation  
Pacific Coast Office Pump Division  
2011 Santa Fe Ave., Los Angeles 21

**ROPER**  
Rotary Pumps

... for more details, circle No. 42 on Reader Service Postcard

**Three machinists' aids  
for aluminum users**

Screw machine operators, shop management and metals buyers will welcome these three informative aids—a guide for machine feeds and speeds, a quantity-weight slide rule calculator and a basic manual on machining aluminum. The guide gives approximate cutting speeds and feeds of aluminum with standard automatic screw machine tools, covering form turning, skiving tools, cut-off drilling, threading, knurling, etc. With the slide rule device that gives pounds per 1,000 pieces of hexagonal and round stock in sizes from  $\frac{1}{8}$  to  $1\frac{3}{4}$  in., you can determine weight in lb. per ft. of the four alloys in stock sizes from  $\frac{1}{8}$  to 8 in. The looseleaf manual consists of nine operator reports by an aluminum technical specialist (additional ones will be mailed each month) giving fundamentals on machining aluminum. *Kaiser Aluminum & Chemical Sales, Inc.* . . . for your copy, circle No. 184

**1958 general catalog  
on seamless, welded tubing**

This eight-page catalog, revised and brought up to date for 1958, covers seamless and electric-resistance welded steel tubing. Carbon and alloy seamless steel tubing in mechanical, aircraft mechanical, airframe quality and pressure grades is included, as well as welded tubing in mechanical and pressure grades. Fabricating and forging steel tubing into special shapes and parts to customer specifications is also described. *Ohio Seamless Tube Div., Copperweld Steel Co.*

... for your copy, circle No. 185

**PROTECTIVE**

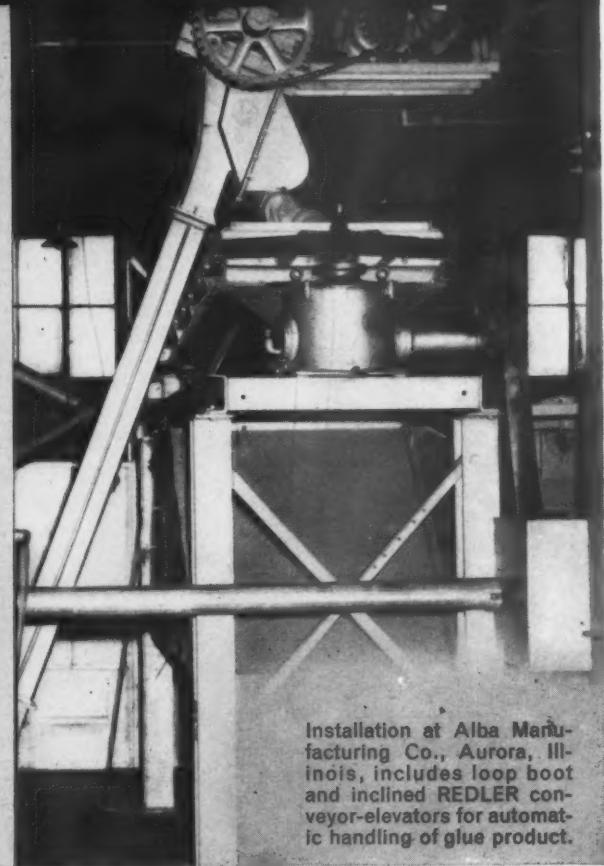
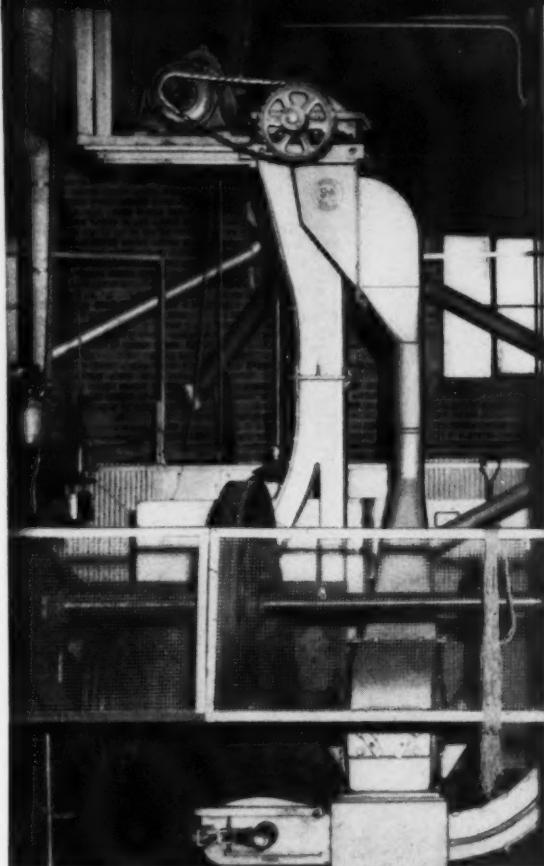
**BITUMASTIC®**

COATINGS

**IN STOCK AT**  
**HOWARD**  
**SUPPLY**  
**COMPANY**

... for more details, circle No. 43

# STEPHENS-ADAMSON



Installation at Alba Manufacturing Co., Aurora, Illinois, includes loop boot and inclined REDLER conveyor-elevators for automatic handling of glue product.

*from start to finish handle your bulk materials automatically*

Obviously, to push forward with increased production, you need automatic aids—mechanical conveying that speeds processing by eliminating back-breaking tasks, wasted motion, and excessive handling.

Conveying equipment to handle every conceivable dry bulk material, and the engineering ability to apply it correctly, has made the big name of STEPHENS-ADAMSON one the materials handling people can rely on. Due to vast engineering and manufacturing experience, the S-A way of bulk material handling is the surest way of keeping production in your plant at the highest level while holding down handling costs.

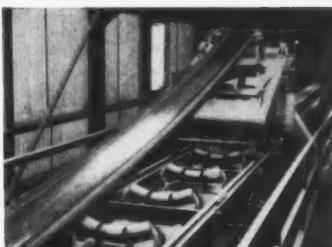
Whenever your raw or processed materials can be handled in bulk form, it is the most economical way. Let the S-A engineer in your area show you why.

S-A manufactures a wide range of material handling products in three complete plants in U. S. and Canada.

Belt Conveyors  
Belt, Pan & Plate Feeders  
Ship Loading Boom Conveyors  
Stacking Conveyors  
Storage & Reclaiming Systems  
"Natural Frequency" Vibrating Conveyors  
REDLER Conveyor-Elevators  
ZIPPER Conveyor-Elevators  
Conveyor Belt Cleaners

Headshaft Holdbacks  
Grizzlies & Screens  
Centrifugal Pilers  
Bin Gates & Tunnel Gates  
Car Pullers & Spotters  
Bucket Elevators  
Skip Hoists  
SEALMASTER Ball Bearing Units

• Write for a bulletin on any of the above products.



A belt conveyor and tripper by Stephens-Adamson handles Ammonium Sulphate for National Aniline Div. of Allied Chemical and Dye Corp., Hopewell, Va. The tripper is self-propelled, discharging an 18-inch belt along a 352-foot run over storage hoppers.



Vital potash fertilizer is loaded into box cars by this STEPHENS-ADAMSON Swiveloader. It is part of a complete handling system and insures maximum uniform loading by throwing potash to far corners of the car.



**STEPHENS-ADAMSON MFG. CO.**

85 RIDGEWAY AVENUE, AURORA, ILLINOIS

LOS ANGELES, CALIFORNIA

BELLEVILLE, ONTARIO

DESIGNERS • ENGINEERS • FABRICATORS.

... for more details, circle No. 44 on Reader Service Postcard

## How to move heavy loads with Multiton roller skids

How to move heavy loads in shipping, maintenance and service operations is the subject of this 16-page manual illustrated with 26 pictures and diagrams. The book describes Multiton roller skid moving methods for 3 to 300-ton loads, while a special chart shows recommended maximum loads which may be moved under varying floor conditions. *Stokvis Edera & Co.*

... for your copy, circle No. 186

## Data on vertical hollow shaft motors

A climatized vertical hollow shaft motor, a drip-proof model in NEMA frames 364 through 505, is the subject of a four-page leaflet. Construction features are listed and illustrated individually and as a group on a cut-away of the motor. Full motor specifications are given on the last page. *Louis Allis Co.*

... for your copy, circle No. 187

## 60-page vest pocket guide on welding facts, figures

"How to Get Better Welds" is a revised edition of Weldors' Vest Pocket Guide containing 60 pages of arc welding information. Included is just

about everything you'll want to know about welding from the metals used and procedure followed, through types of welds and symbols, to welding accessories and power sources. Also included is an explanation of AWS classification numbers and comparative index of welding electrodes. *Hobart Bros. Co.*

... for your copy, circle No. 188

## Seven points to consider in ordering sling chain

Featured in this four-page brochure is a list of the seven main points to keep in mind when ordering sling chains. A chart of the working load limits of two-leg sling chains also helps in selection, as does brief but concise text on different types of chain. *American Chain & Cable Co., Inc.*

... for your copy, circle No. 189

## Take a quick glance at "lungs" for industry

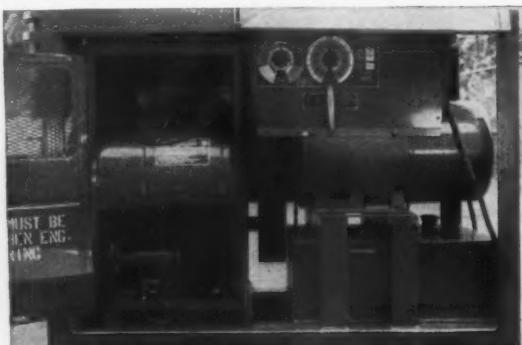
General Blower's line of ventilators, exhausters, fans, coolers, and boosters is given quickie treatment in this four-page leaflet, which pictures each unit and mentions the bulletin available about it. Specially featured is a standard turbo blower which is pictured and described in some detail. *General Blower Co.*

... for your copy, circle No. 190

**3,143  
operating  
hours**

*with only  
minor  
adjustments  
with this*

*400 amp.*



## WISCONSIN-POWERED WELDER

On-the-job service is what counts most in an engine. Here, for example, is a brief summary of a service report covering the performance of the Model VR4D 56 hp. Wisconsin Heavy-Duty AIR-COOLED Power Unit which drives the 400 Ampere Arc Welder illustrated above:

*"Has operated exceedingly well... approximately 3143 operating hours... maintenance has been negligible after a few minor adjustments; appreciate fact that servicing is so simple; we are free of anti-freeze... no tooling with gadgets of water-cooled engines."*

This is another typical case of outstanding service delivered by Wisconsin Heavy-Duty Air-Cooled Engines on many kinds of equipment. Basic load-holding High Torque, heavy-duty design and construction in all details, foolproof all-weather Air-Cooling and exclusive specialization in the design and manufacture of AIR-COOLED Engines are some of the factors that are responsible for Wisconsin Engine preference wherever dependable, economical power is required.

You can't do better than to specify "Wisconsin Power" for your equipment. Write for Wisconsin Engine Bulletin S-212.



**WISCONSIN MOTOR CORPORATION**

World's Largest Builders of Heavy-Duty Air-Cooled Engines

MILWAUKEE 46, WISCONSIN

... for more details, circle No. 45 on Reader Service Postcard

## Engineering manual on ball and roller bearings

How to select ball thrust bearings, calculate thrust load capacities for any speed and thrust loads for various gear drives, select proper grease and methods and how to handle and care for bearings are among the valuable facts you'll find in this 88-page general catalog and engineering manual. Included in this 15th edition are an engineering data section to correlate Anti-Friction Bearing Manufacturers' Association terminology with the firm's bearing designs, sections on fits and tolerances, effects of parallelism and flatness, and full details on the firm's wide range of basic and special products. A section on a new line of ball bearing packaged units is also available separately. (Catalog AG-57). *Aetna Ball & Roller Bearing Co.*

... for your copy, circle No. 191

## 40-page basic data book on power transformers

GE's line of "Preferred Design" power transformers is introduced in this 40-page book, which opens with a discussion of "Preferred Design" and points out the "Preferred Design" features of the transformers. Other data include pricing, internal features, cooling methods, load tap changing and installation. Performance data, outline drawings, dimensions and weights are given for typical ratings ranging from 5,000 to 50,000 kva., 69 to 138 kv., with or without load tap changing. Well illustrated with photographs. *General Electric Co.*

... for your copy, circle No. 192



**RIGID  
THREADING MACHINES**

**H  
S  
C  
O  
M  
P  
A  
N  
Y**

... for more details, circle No. 46

### 16-page review of safety switches

Latest descriptive, dimensional and specifications data on this line of switches is contained in a 16-page bulletin covering the Master, Junior and Raintight series. Sections on design and operations, on fuses and ratings are included, plus tables, knock-out data and blue-prints. *Bulldog Electric Products Co.*

... for your copy, circle No. 193

### 36-page manual describes compressor line

Basic principles, design features, capabilities, capacity control, and manufacturing are some of the section headings in this comprehensive manual about a line of balanced opposed compressors of 300 to 10,000 hp. Double-page color cutaways point out distinctive features of construction, and other illustrations add to explanations of various components and operation. *Worthington Corp.*

... for your copy, circle No. 194

### Engineering data on fail-safe electric brake

All the technical facts on a new electric brake for fail-safe application are given in this comprehensive, spiral-bound, 36-page volume that features detailed blueprints of many models, plus photographs and other illustrations. A valuable aid to the design engineer, it includes complete explanations of operation, selection factors, torque characteristics and controls. *Warner Electric Brake & Clutch Co.*

... for your copy, circle No. 195

### Pocket folder on coolant and lubricating compound

Lubri-Cut, a coolant and lubricating compound, is detailed in this four-page fold-out. Given are the cutting compound's advantages, properties and applications, as well as how-to-use data for hole tapping, drilling and reaming. Application photographs are included. *LC Tap & Drill E-Z Corp., Div., Darco Industries Inc.*

... for your copy, circle No. 196

### Compact folder on pushbuttons

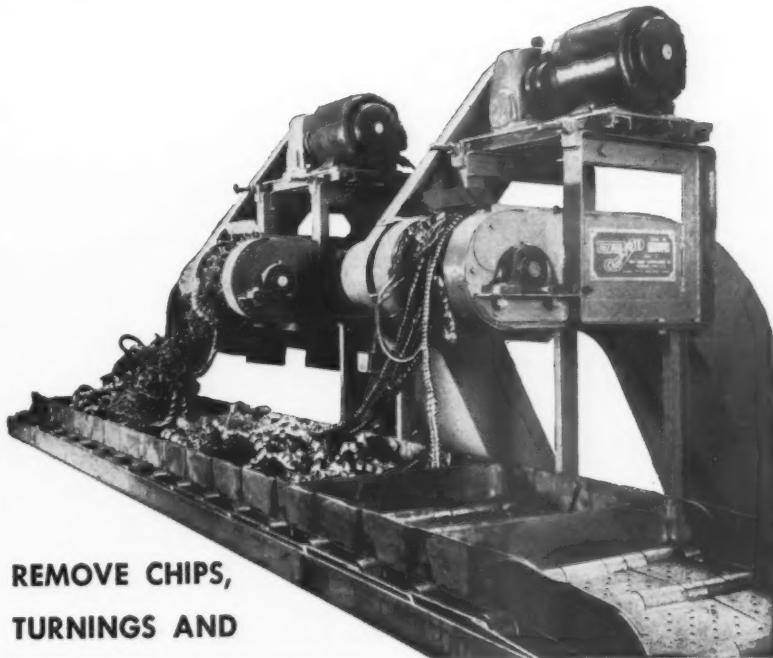
Heavy-duty, oil-tight pushbuttons are the subject of this fold-out manual that points out flexibility and versatility of these control devices. Description and representation of the firm's complete line is given, along with application suggestions and hookup arrangements. *Cutler-Hammer, Inc.*

... for your copy, circle No. 197



## LOOK...NO HANDS!

That's right! The May-Fran CHIP-TOTE permits the continuous operation of machine tools by eliminating down-time for scrap removal...skilled workers stay on the job...production increases by as much as 20%! Versatile CHIP-TOTE conveyors are available in a wide range of sizes to serve practically any type or size of machine tool. Conveyor speed is adjusted to meet the scrap removal needs of the machine.



REMOVE CHIPS,  
TURNINGS AND  
BORINGS CONTINUOUSLY  
AND AUTOMATICALLY  
WITH A **MAY-FRAN CHIP-TOTE**

Write today for your copy  
of Bulletin MF-640



**MAY-FRAN**

ENGINEERING, INC. 1771 Clarkstone Rd. • Cleveland 12, Ohio

... for more details, circle No. 47 on Reader Service Postcard

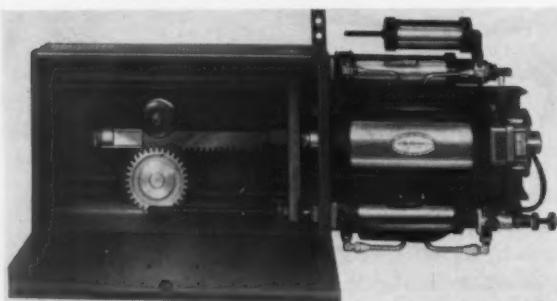
# NEW EQUIPMENT

for Western plant operation,  
production, and maintenance

USE RIP-OUT POSTCARD, page 69, for more information on products described

## POWER FEED UNIT

... for multiple drilling applications

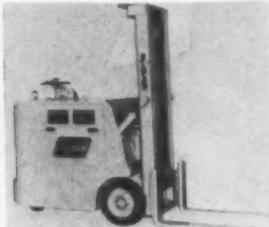


A rugged, complete heavy duty unit, the Hy-Torque is designed primarily to power the feed on multiple drilling applications. Basic unit of the device consists of a steel gear rack that drives a pinion gear mounted on a shaft with a hub as the drive unit. The 3,000 inch-pounds maximum torque delivered at the hub may be applied to any cross-feed shaft or driven shaft for rotational or linear movement. Four models provide degrees of rotation of the four in. pitch diameter pinion gear—170, 255, 340 or 425 deg. Operating on any pressure between 15 and 150 lb., there are units available for either line or low voltage operation. A 4 1/2-in. bore Bellows air motor advances the gear track with a thrust of 15 times applied air line pressure; two Hydro-checks govern feed rate and balance hydraulic reaction during feed portion of the stroke. *The Bellows Co.*

... for more details, circle No. 200 on postcard

## 2,000-LB.-CAPACITY FORK TRUCK

... with 72 fpm. lift speed



A 72 fpm. lift speed; 6 1/2 mph. travel speed; short turning radius, and 360-deg. steering are features of this electric powered fork truck, a re-designed version of the firm's Cargo-Scout. Other design advantages for this Model F-38T2 are excellent visibility through stand-up end control; dead man control and overload valves to protect operator and load; packaged unit assemblies for ease of maintenance, and full foot control of all speeds, leaving operator's right hand free for hoist and tilt operations. *The Elwell-Parker Electric Co.*

... for more details, circle No. 201 on postcard

## TWIN HOOK HOIST CARRIER

... with attachments for dumping

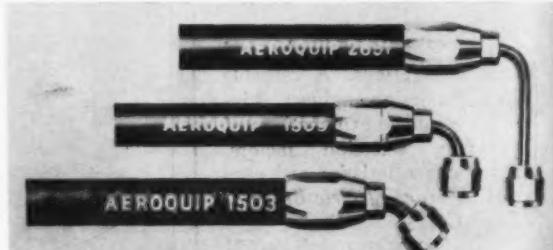


Designed for handling slag in steel mills, this cab-controlled twin-hook hoist carrier is also suitable for handling castings, bolts, nuts, other machined parts; sand and bulk materials. Weatherproofed for outdoor service, the carrier uses an auxiliary hoist for dumping operations. Specifications include hoist speed at 35 fpm., with travel speed of 250 fpm. and a capacity of 12,000 lb. You can also control lift by variable speed drum controllers which are provided. *The Cleveland Crane & Engineering Co.*

... for more details, circle No. 202 on postcard

## HOSE ELBOW FITTINGS

... simplify installation in confined spaces



Designed to make installation of hose assemblies simpler in confined spaces, these new fittings eliminate need for combinations of standard elbows and adapters plus straight hose fittings. Fabricated from formed tubing to offer less flow restriction than standard forged elbows, they come in swivel nut ends with JIC and SAE threads, as well as mating adapters for pipe threads. All parts are steel. To be used with medium and high pressure hose, they are made in 45 and 90 deg. configurations, with both short and extended length elbows available. Swivel fittings tighten without twisting the assembly, and assemblies with double fittings may be angled to required positioning. *Aeroquip Corp.*

... for more details, circle No. 203 on postcard

# IRVING G. PERIN CO.

## Material Handling Equipment

LOCAL STOCK & PARTS

SAN FRANCISCO 5  
575 Howard Street  
Phone GARfield 1-1827

SERVICE • • • SURVEYS

... for more details, circle No. 48 on Reader Service Postcard

WESTERN INDUSTRY—December 1957



## They look like twins... but one is synchronous



**Louis Allis "SYNCRO-SPEDE"\*\* offers... for the first time... a synchronous motor in the same frame sizes as a standard induction motor**

New from Louis Allis — *the most compact and efficient synchronous induction motor on the market* . . . the revolutionary "Syncro-Spede." It's the *only* synchronous motor built in standard NEMA frames for comparable ratings in any enclosure.

The space-saving "Syncro-Spede" has no external excitation, wound rotating fields, collector rings or brushes—offers simplified control and low-cost operation. And it's virtually maintenance-free.

In performance, "Syncro-Spede" delivers and maintains exact synchronous speed within its rated capacity, regardless of load variations or voltage dips. When "Syncro-Spede" motors of several different ratings are powered by a single adjustable-frequency

source, their acceleration, running speed, and deceleration can be synchronized.

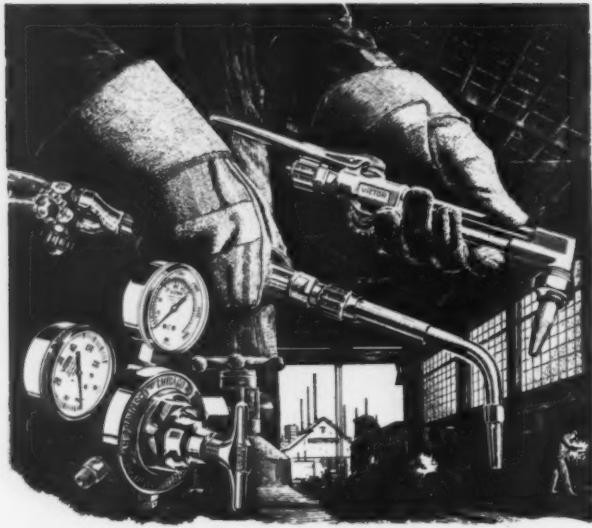
"Syncro-Spede" is the low-cost answer to such demanding synchronous applications as *precise adjustable-frequency multi-motor systems* . . . high-frequency generator drives and constant-speed conveyor drives . . . precision timing and metering devices . . . recording instrument drives . . . any system requiring constant speeds from no-load to full-load.

"Syncro-Spede" sizes range up to 100 hp. For information and expert application engineering assistance, contact your nearby Louis Allis District Office or write directly to The Louis Allis Company, 440 East Stewart Street, Milwaukee 1, Wisconsin.

\*\*"Syncro-Spede" is a trademark of the Louis Allis Co.

MANUFACTURER OF ELECTRIC MOTORS AND ADJUSTABLE SPEED DRIVES  
BURLINGAME • LOS ANGELES • PHOENIX • PORTLAND • SEATTLE • DENVER • SALT LAKE CITY

... for more details, circle No. 49 on Reader Service Postcard



**the most flexible tools  
in the  
metal working industry**

**VICTOR** COMBINATION WELDING  
AND CUTTING UNITS

**FOR EASE OF HANDLING DIFFERENT JOBS . . .** Welding, brazing, hardfacing, heating, heat treating, descaling and paint burning. Cutting, trimming, deseaming and weld scarfing.

**WITH A WIDE VARIETY OF NOZZLES, TIPS  
AND CUTTING ATTACHMENTS,** with quick-change, hand-tight, time tested sealing ring connections.

**RELIABLE FIELD-PROVED REGULATOR DESIGN** for safe, dependable pressure and flow control.

See for yourself how easy it is to handle your work when you use Victor equipment. Ask your Victor dealer for literature or a demonstration.



Mfrs. of welding & cutting equipment;  
hardfacing rods, blasting nozzles;  
cobalt & tungsten castings;  
straightline and  
shape cutting machines.

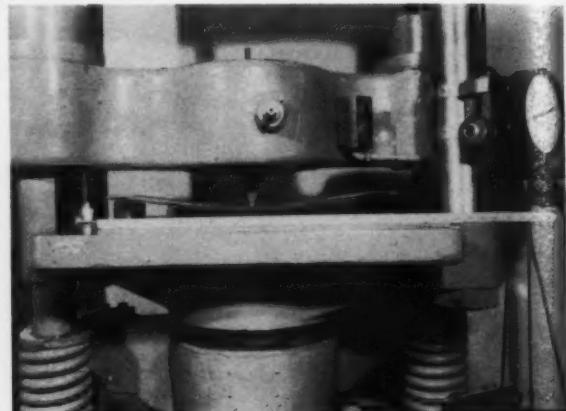
**VICTOR EQUIPMENT COMPANY**

844 Folsom St., San Francisco 7 • 3821 Santa Fe Avenue, Los Angeles 58

... for more details, circle No. 50 on Reader Service Postcard  
68

**SPACE-WELDING METHOD**

... joins spaced sheets up to  $\frac{1}{8}$  in. thick



Spaced metal sheets with thicknesses up to  $\frac{1}{8}$  in., and gaps or spaces up to twice the thickness of the bottom sheet can be welded together with new method, space-welding, that does not require metal-to-metal contact between sheets or specially prepared sheets with projections or holes. Requiring minimum material preparation, it uses standard Sigma spot-welding equipment, can be used effectively on almost any material, except possibly aluminum. It works like this: a delayed wire feed is used with standard spot-welding equipment and argon shielding gas so that the arc melts a hole through the top sheet, fusing molten material to the lower one. Then a column of metal is built up until it fills the hole and fuses with the top sheet. In the picture above, a pressure of 412 lb. is being applied by the machine to produce  $\frac{1}{2}$  in. deflection on this sample space-welded assembly of  $\frac{1}{16}$ -in. carbon steel sheets. On a single  $\frac{1}{8}$  in. thick sheet, only 212 lb. pressure is needed to produce the same deflection. *Linde Co., Div. of Union Carbide Corp.* ... for more details, circle No. 204 on postcard

**TRUCK CRANE**

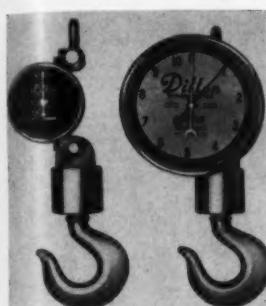
... fully hydraulic, one man-operated



A Swedish product now available here, this crane requires but 15 in. of space between cab and truck bed, leaving entire bed open for load. Called the Hiab 170, its lifting capacities range from 6,000 lb. on the shortened boom of 5 ft., to 2,500 lb. on full 13-ft. boom. Crane will lift up to 20 ft. above ground level at a maximum speed of 20 in. per sec.; control is from either side of the cab, and the positive, accurate crane action swings in a 360 deg. arc. *Stanco Manufacturers and Sales, Inc.* ... for more details, circle No. 205 on postcard

## DYNAMOMETERS

... measure torque, tension, traction



These two traction-type dynamometers with capacity ratings of 0 to 5,000 and 0 to 10,000 lb. are designed for precision measurement of torque, weight, tension, traction or compression. Each individually calibrated unit is unaffected by temperature extremes and can sustain accidental overload up to 25% without injury. A red

maximum pointer and a set of high tensile clevises are furnished as standard equipment with each model. Both have adjustable zero settings, shatter-proof glass dials in 5 or 10-in. diameters and are available calibrated in pounds or kilos. *W. C. Dillon & Co.*

... for more details, circle No. 207 on postcard

## PAKLON FILM TAPE

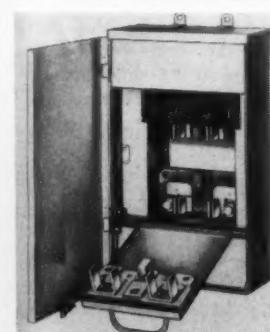
... resists moisture, acids, alkalis

This general purpose industrial tape, Paklon No. 681, is resistant to moisture and many acids, as well as alkalis and solvents. A transparent pressure-sensitive tape, it has long aging properties because of a dimensionally stable film backing inert to oils, alcohols, and aliphatic hydrocarbons. With an adhesion of 40 oz. per inch of width (ASTM), the tape has high aroma impermeability and is non-inflammable. Caliper of the printable tape is 2.6 mils, and it has a tensile strength of 25 to 35 lb. per in. of width. *Minnesota Mining & Mfg. Co.*

... for more details, circle No. 208 on postcard

## RAINTIGHT SWITCH

... with door-in-door construction



This 200-amp. raintight switch has a main door which shields all live parts and is mounted on the side with sliding hinges that can be sealed or padlocked, and a small door inside which operates the switch. The fusible service switch is a three-pole, two-fuse solid neutral unit with 120-240 volts a-c. The cabinet is built of steel and covered inside and out with blue-gray enamel. It comes equipped with a 2-in. hub. The switch has pressure wire connectors and is UL approved. *Wadsworth Electric Mfg. Co., Inc.*

... for more details, circle No. 209 on postcard

## TOTE TILT

... eliminates truck damage to gaskets

This stationary hopper tilt eliminates lift truck damage to gaskets as well as permitting a gasketed dust-tight seal between the tilt hopper and surge hopper or conveying system into which the tilt feeds. Tote Tilt, including the sealing gaskets, remains in a fixed position while in use and the bin is elevated to make contact with the gaskets and hopper. Tilts are available both as screws and gravity discharge mechanisms. *Tote System Inc.*

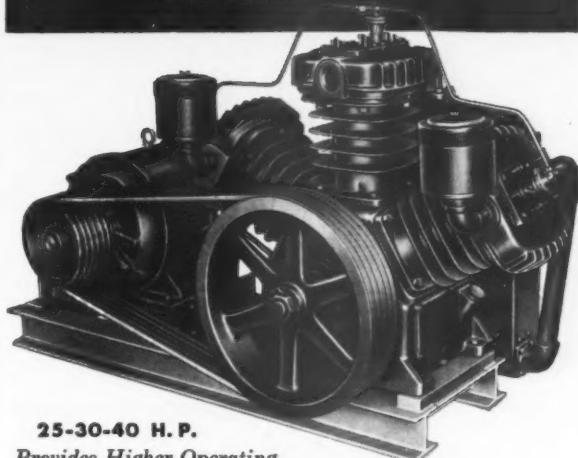
... for more details, circle No. 210 on postcard

## CURTIS MODEL C-100

Two-Stage, Air-Cooled Air Compressor

Delivers **MORE** Air...

MINUTE  
HORSEPOWER  
**PER**  
KILOWATT HOUR OF  
ELECTRICAL ENERGY  
CONSUMED



25-30-40 H.P.

Provides Higher Operating  
Efficiency Costs Less to Install

The Curtis Two-Stage Compressor assures a saving in your power costs. It's air cooled, thereby eliminating expensive water bills—quick and easy installation with no complicated plumbing problems.

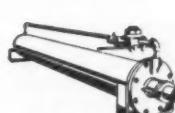
The new C-100 embodies all the well-known Curtis engineering features such as centro-ring oiling and Timken Main Bearings.

For complete information  
write for illustrated folder.



CAN COUNT  
REMEMBER...  
NO. 1  
*Curtis*  
OUR 103rd YEAR  
MANUFACTURING COMPANY  
PNEUMATIC DIVISION

1954 Kienlen Ave. St. Louis 20, Mo.



AIR HOISTS  
AIR CYLINDERS



AUTOMOTIVE  
AIR COMPRESSORS



PACKAGED  
AND  
REMOTE  
AIR  
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CM-21

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R. K. McCoy, 3033 San Pablo Ave., Berkeley 2, Calif.  
Ed Craven, 1018 Southeast Eighth Ave., Portland 14, Oregon

... for more details, circle No. 51 on Reader Service Postcard

# Copper Furnace Brazing

**COSTS PENNIES**

**SAVES DOLLARS**



Use the SUPERWELD short cut to better production at LOWER COST. We have the largest controlled-atmosphere electric furnace west of Chicago. Many parts which formerly required scarce steels and excessive machine time are now made in our furnace, quickly and at considerable savings in cost.

For further information call STanley 7-3121



**SUPERWELD CORP.**  
6840 Vineland Ave., No. Hollywood, Calif.

... for more details, circle No. 52 on Reader Service Postcard

## EMPIRE FOR ALL BUILDINGS

**STEEL PANEL**



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STEEL AND CONCRETE CONSTRUCTION—TURNKEY JOBS

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... for more details, circle No. 53 on Reader Service Postcard

## MARKING NAIL ... as you like it



Identifying property, indicating installation dates and distinguishing company products are a few of the uses for these marking nails, which are made to order. Heads may be imprinted with a number, letter or combination of each, either raised or depressed. Large nails may be supplied with heads with an outer rim to protect the marking when the nail is driven. Generally made of non-corrosive copper or aluminum, nails range in size from .105 to 5/16 in. in diameter. John Hassall Inc.

... for more details, circle No. 211 on postcard

## EXTENSION UNIT

... for heavily loaded tote pans



Fixture gains tightening pressure as the hoist is raised. Rapids-Standard Co. Inc.

... for more details, circle No. 212 on postcard

## LEGSTAT

... drains static from body to floor



You won't get a hotfoot with Legstat, which is worn under the arch of the shoe and fastened to the lower leg. This band and garter device allows static to drain from the body to the conductive floor. Legstat is fastened to the shoe by an elasticized band which fits around the vamp, while skin contact is made by a light weight metal plate

worn in a garter assembly on the outer side of the leg. The assembly attaches with a snap-on button and fits any individual. Walter G. Legge Co., Inc.

... for more details, circle No. 213 on postcard

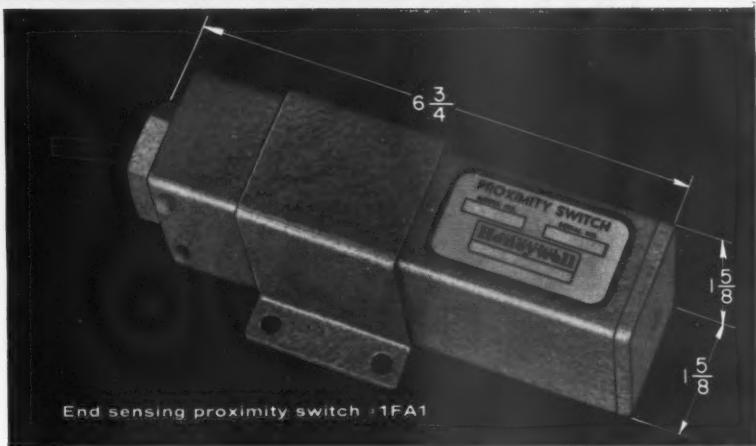
# MICRO SWITCH

... FIRST IN  
PRECISION SWITCHING



## NEW!

### The Honeywell Proximity Switch

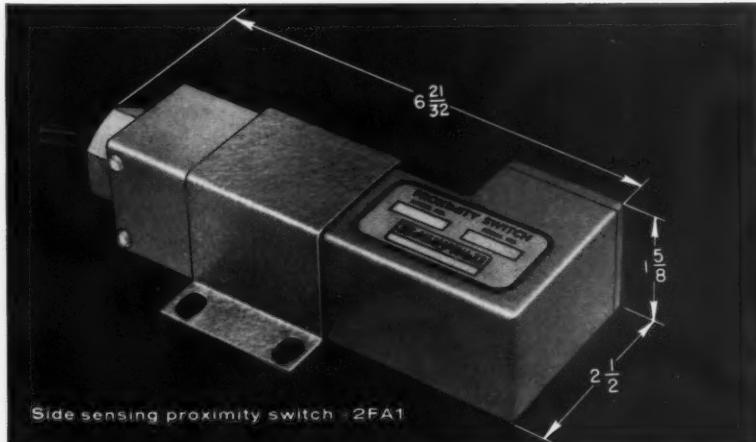


*Ideal limit switch on automatic machine tools—for use in materials handling control  
—for programming operation of transfer machines in automation equipment.*

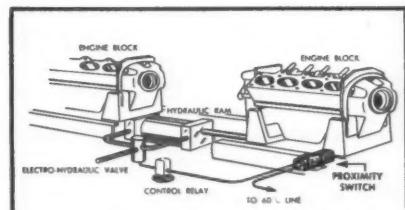
### Consider these important features of this sensational magnetic switching device—

- **LONG LIFE**—No moving parts . . . no electrical contacts . . . no vacuum tubes.
- **HIGH SPEED OPERATION**—Will operate as many as 600 times a minute.
- **EXTREMELY SENSITIVE**—Can be operated by ferromagnetic surface as small as  $\frac{1}{4}$  in. square and 1 in. long.
- **RESISTS ENVIRONMENT**—Relatively insensitive to ferrous chips . . . potted to permit operation in high humidity, corrosive atmosphere, or in presence of cutting oils . . . protected by heavy steel housing.

(Request Data Sheet Nos. 119 and 130)



Any MICRO SWITCH field engineer  
will be glad to work with you regarding  
the wide applications for  
this new Proximity Switch.



### SPECIFICATIONS

**EXCITATION**  
100-125 v, 60 cps, 2 watts (nominal).

**OUTPUT**  
(a) switch "on"—12 vdc minimum into 250 ohm load; (b) switch "off"—4 vdc maximum into 250 ohm load.

**SENSITIVITY**  
When a block of ferromagnetic material is moved parallel to and within  $\frac{1}{4}$  in. of its pole face, the Proximity Switch will operate the control relay.

**REPEATABILITY**  
When a block of ferromagnetic material is moved parallel to and within  $\frac{1}{4}$  in. of its pole face, the Proximity Switch will repeat its pick-up and drop-out point within  $\frac{3}{32}$  in.

**DIFFERENTIAL**  
When a block of ferromagnetic material is moved parallel to and within  $\frac{1}{4}$  in. of its pole face, the Proximity Switch will have a differential distance between pickup and drop-out of less than  $\frac{7}{32}$  in.

# MICRO SWITCH

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY



In Canada, Leaside, Toronto 17, Ontario • FREEPORT, ILLINOIS

... for more details, circle No. 54 on Reader Service Postcard

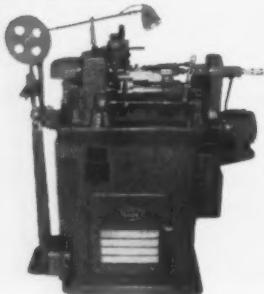
The Success of **TRAUB** Automatic Screw Machines on the West Coast is Based on

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We will set up a machine in our shop to produce your part for your inspection at no charge or obligation.

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A-25  
1" Collet Cap.  
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A-46  
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40-60 machines always in stock.  
\$200,000 stock of parts, cams, collets, etc.

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... for more details, circle No. 55 on Reader Service Postcard

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### AIR CYLINDERS!

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- 6 Mounting Styles
- 8 Bore Sizes
- 9 Stroke Lengths

When you specify NOPAK "Shelf-Stock" Air Cylinders you save money 3 ways:

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NOPAK "Shelf-Stock" Air Cylinders are available in a wide range of bore sizes and stroke lengths from 1 1/2" x 1" to 8" x 15". No other manufacturer offers such a wide range of selection in Brass Tubing, Precision Machined, Cushioned Air Cylinders at comparable prices.

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replaces the 4 1/2" bore in the NOPAK Shelf-Stock line, with no price change — extra cylinder power at no extra cost. Compare quality and prices, and you'll specify NOPAK. Write for Current Listings and Catalog 101.

GALLAND-HENNING NOPAK DIVISION • 2749 S. 31st St., Milwaukee 46, Wis.

## NOPAK VALVES and CYLINDERS

... for more details, circle No. 56 on Reader Service Postcard

### INDUSTRIAL TRUCK

... has enlarged battery compartment



Transporter models WPY 4 and 6 in Automatic Transportation's line of low lift pallet industrial trucks have been re-designed to provide users with space for 50% more power, according to the manufacturer. The units' battery compartments have been increased to 15 1/2 in., enabling them to accommodate up to six-cell, 23-plate lead acid batteries, or the equivalent. Transporters measure 29 in. plus length of load and have a maximum steering angle of 200 deg. A heavy-duty class H silicone-insulated motor is standard equipment on the 6,000-lb. capacity Transporter, while a Class B motor powers the 4,000-lb. model. *Automatic Transportation Co.*

... for more details, circle No. 214 on postcard

### RELEASE PAPER

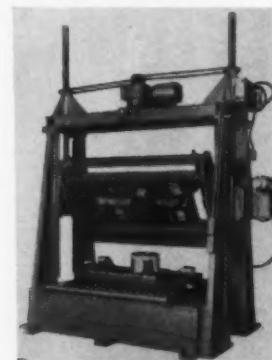
... for use with tacky surfaces

This chemically treated release paper, available with one or both sides treated, can be used for interleaving rubber and rubber products, tapes, shingles and other items with tacky surfaces. It is available in standard rolls 1 x 200 yd. or slit and sheeted to order. *Daubert Chemical Co.*

... for more details, circle No. 215 on postcard

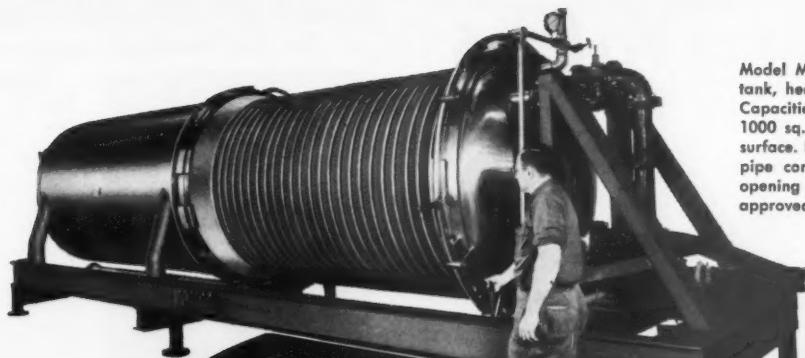
### DIE HANDLING MACHINE

... accommodates all die sets

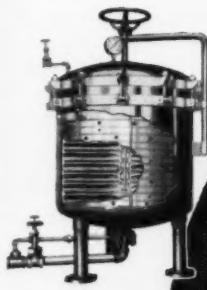


Available in sizes to accommodate all die sets, this die handling machine was designed to simplify and speed assembly and disassembly of die sets. It replaces chain falls, sledge hammers and the manual labor usually needed for the job, also eliminating the problem of bent leader pins, according to the manufacturer. In disassembly a die set is rolled onto the ball transfer table from a lift truck and positioned under the slide frame, which is lowered electrically over the top die shoe. The slide frame is then clamped to the top shoe with a hand crank, and the top shoe lifted off by raising the slide frame. After the top shoe has cleared the bottom shoe, it may be rotated to any desired angle for repairs or removal. Assembly of a die set is done by reversing the disassembly procedure. *E. W. Bliss Co.*

... for more details, circle No. 216 on postcard



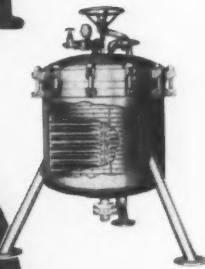
Model MCR retractable tank, heavy duty filter. Capacities 100 sq. ft. to 1000 sq. ft. of filtering surface. No breaking of pipe connection. Quick opening cover. ASME approved.



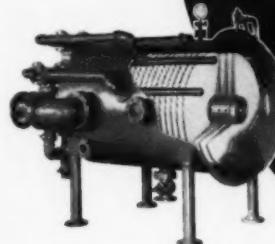
Standard horizontal plate filter. Has positive cake stability under all conditions, even with a complete shut down of filtering.

# SPARKLER FILTERS

*Filtration Engineering  
for all industrial and  
municipal filtering  
requirements . . .*



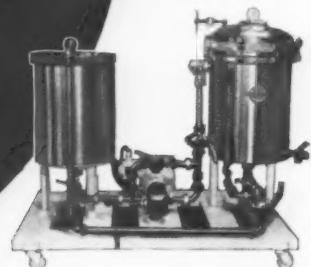
Beer polishing filter. Removes all yeast cells and a large percentage of bacteria. Produces a beer of greater stability and longer shelf life.



Model SCJ heavy duty water filter. Designed for industrial plant water, municipal water supply and swimming pools. Available in capacities up to 5,000,000 gal. per day.



Plating solution filters. Used in the world's largest plating plants.



All stainless steel horizontal plate filter with stainless steel piping valves, and slurry tank. For sanitary operation on food products.

Engineering special adaptations of standard filters to meet particular requirements of a product is a continuous daily occurrence at Sparkler. Whatever your filtering problem may be, Sparkler engineers with over 30 years of experience in solving similar problems, probably will be able to offer a solution without expensive experimentation. Hundreds of special filters have been developed in addition to the modern standard

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... for more details, circle No. 57 on Reader Service Postcard

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FOR ALL INDUSTRIAL APPLICATIONS



26  
TYPES & SIZES

WHEEL TYPES: Drop Center, Lug Base, Disc, Demountable.

WHEEL DIAMETERS: 21", 20", 18", 17", 16", 15", 12", 10", 8", 6".

BEARINGS: Tapered roller, straight roller or ball.  
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### ALL-PURPOSE DURASHEATH CUTS COST

Anaconda's neoprene-jacketed Duraseath\* cable cuts installation costs because it can be installed in ducts, buried, aerially or any combination of these in one run—with minimum splicing. It reduces maintenance and replacement costs because its rugged jacket resists abrasion, moisture, corrosive chemicals and oils that shorten ordinary cable life. Available in all sizes, single and multiple conductor, copper or aluminum, 600 to 15,000 volts. For full information, write: Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.

57359

**ANACONDA®**

\*Reg. U.S. Pat. Off.

... for more details, circle No. 59 on Reader Service Postcard  
76

### HAND SCREW MACHINE ... for short production runs



Designed for production runs of 50 to 1,000 pieces, this hand screw machine will handle simple washers and shafts or intricate electronic parts. It serves the purpose where limited production doesn't justify the cost of automatic screw machine. The unit has a bed turret with six stations for up to six operations. The turret is moved from one

operation to the next with a turn of the pilot wheel and the work piece is chucked by simply touching a lever. A special feature of the machine is a pilot wheel feed which combines slide movement with 8-in. travel to increase the size range of jobs the machine can perform. Universal tool positioning is also possible. *Delta Power Tool Div., Rockwell Mfg. Co.*

... for more details, circle No. 217 on postcard

### CONVEYOR PULLEYS ... built for the belt

Design changes in American Pulley's line of heavy-duty conveyor pulleys have resulted in pulleys which have "built for the belt" ratings without help from over-size shafts. The Type HD conveyor pulleys, which use fabric-carcass conveyor belts, also have improved hubs. *American Pulley Co.*

... for more details, circle No. 218 on postcard

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WESTERN INDUSTRY—December 1957

## SPRAY EQUIPMENT

... handles lacquers, dope, oil



pump and air line accessories. *Aro Equipment Corp.*

... for more details, circle No. 219 on postcard

## DOTS BEFORE YOUR EYES?

... It's just the Mighty-Grip



... for more details, circle No. 220 on postcard

## SHIFT ATTACHMENT

... cuts down on lift truck maneuvers



and load 6 in. to either side of center and permits slewing forks and load in a 10-deg. arc in either direction. *Yale & Towne Mfg. Co.* ... for more details, circle No. 221 on postcard

Lacquers, synthetics, airplane dope, fillers, die drawing compounds, metallics and phenolic are just a few of the materials that can be sprayed with this air operated paint spray equipment. Items in the line include a 4:1 ratio divorced type paint spraying unit in 50-lb. capacity, 2:1 ratio portable and stationary units, and 1:1 ratio paint transfer pump for paints, lacquers and thinners. Also included are multi-purpose spray stations; production line circulating systems, air and paint hoses, and paint

57



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**SPANMASTER CRANE DIVISION**

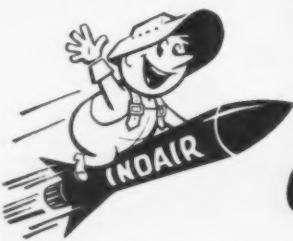
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SPECIALISTS IN BEARINGS AND POWER  
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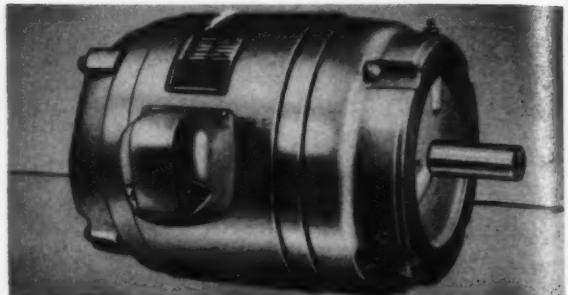
GENERAL OFFICES: 1940 So. Figueroa St., Los Angeles 7, Calif.  
WAREHOUSE & CUSTOMER SERVICE: 1937 So. Flower St., Los Angeles 7, Calif.

404 W. Jefferson St. 745 Fifteenth St. 4035 E. 52nd St. 2041 W. Anaheim St.  
PHOENIX, ARIZ. SAN DIEGO, CALIF. MAYWOOD, CALIF. LONG BEACH, CALIF.

... for more details, circle No. 63 on Reader Service Postcard

### FOOTLESS MOTOR

... connects directly to equipment



This Uniclosed footless motor with NEMA style C unit mount bracket for automatic alignment connects directly to the driven equipment. The drip-proof motor is built to the latest NEMA specs and is available in ratings from 1 to 30 hp. A Ventrifoil deflector directs air and deflects water, and the cast iron one-piece frame is heat-treated to prevent warpage. Windings are asbestos protected. A cast-iron, split-type conduit box is supplied and may be located above, below or on either side of the motor. Rotors are solid cast and dynamically balanced. *U. S. Electrical Motors Inc.*

... for more details, circle No. 222 on postcard

### PALLET TURNTABLE

... a booster for manual operations



the turntable will handle both two-way and four-way pallets up to 48 x 48 in. and loads up to 4,000 lb. per pallet. The platform rotates on six heavy-duty inverted casters mounted to a floor plate and does not have to be secured to the floor. No air or electrical supply is required for operation. *Lamson Corp.*

... for more details, circle No. 223 on postcard

### WALKIE TRUCK

... for die handling operations



This electrically powered walkie material handling truck was designed to handle dies weighing as much as 7,500 lb. A platform type truck, the Jack Stacker is equipped with hydraulic pusher and puller, and can high stack dies in storage racks as well as transport and place them directly in press beds. Operated by a control handle as you walk along beside, the truck has a platform 42 in. long and 32 in. wide. Horizontal stroke of the pusher-puller is 42 in., while platform elevation is 54 in. Four rubber-tired rear wheels and two aluminum caster wheels support the load carrying frame of the truck. *Lewis-Shepard Products Inc.*

... for more details, circle No. 224 on postcard

## SKIVING KNIFE

... with tungsten carbide flame plating



Tungsten carbide particles blasted to the surface of this disc blade have produced a flame plated skiving knife for the rubber industry that in recent tests cut 214 miles of rubber in a 10 1/2 week period without requiring a regrinding. According to the manufacturer, unplated knives cut

only 6 miles of rubber daily before sharpening was necessary. These flame plated knives are self sharpening since, as the softer steel base is worn away, the hard thin tungsten carbide coating presents a continuous sharp edge to the rubber. Flame plating is a unique process of Linde Co., Division of Union Carbide Corp. The flame-plated skiving knives are available from Heinemann Saw Corp.

... for more details, circle No. 225 on postcard

## TWO-SPINDLE NUTSETTER

... handles wing nuts automatically

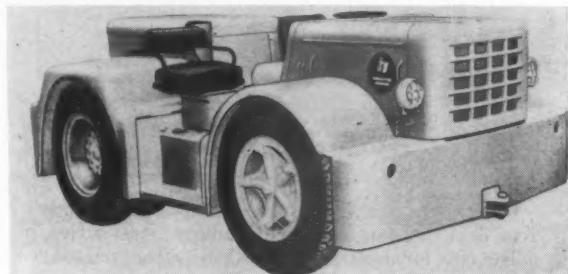
Utilizing integral air-driven nutsetters with nut-tension control, this two-spindle nutsetter automatically feeds and runs down wing nuts. Designed for mop assembly, the nutsetter will fasten together mop and handle at a rate of 20 mops a min., or 1,200 an hour. When the mop handle is placed over the studs and pushed under the nutsetter units, the machine is automatically activated. An elec-

trically driven vibratory unit feeds two wing nuts into position and the two air screwdrivers run down the wing nuts. Nut tightness and screwdriver torque are both controlled. The machine can be mounted on a bench or table. *Thor Power Tool Co.*

... for more details, circle No. 226 on postcard

## TOWING TRACTOR

... has 15,000 lb. of drawbar effort



Power steering and transmission, four-wheel power brakes and planetary type final drives are some of the features of the Model T-150 towing tractor, which can develop 15,000 lb. of drawbar effort and operate on gasoline or L. P. Gas. With a maximum speed of 22 mph., the Model T-150 is a maneuverable unit suitable for use in industrial, rail and motor truck terminals, as well as for such specialized functions as moving aircraft weighing up to 250,000 lb. Head and tail lights are standard equipment, and a variety of accessories are available. *Frank G. Hough Co.*

... for more details, circle No. 227 on postcard

# EXTRA HEAVY DUTY Air & Hydraulic Cylinders

New design eliminates weak points

- \* NO TROUBLESOME TIE RODS OR SNAP RINGS
- \* CAST STEEL CYLINDER HEADS, "O" RING SEALED. NO BROKEN HEADS OR CLEVISSES.
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### Solve "HOT SPOT" Fluid Line Problems With Aeroquip 2802 Hose of TEFLO™

One of the toughest assignments for any fluid-carrying line is to convey live steam. When constant flexing is an added burden, frequent breakdowns are expected. But, on the installation pictured above, Aeroquip 2802 Hose (Teflon) has seen over a year of service with no leakage . . . not even a sign of failure.

Aeroquip 2802 Hose Lines assure excellent performance for fluid temperatures up to 500° F., or where application demands lubricity, non-adhesion of sticky or viscous materials, chemical inertness and long wear. Savings are made possible with leak-proof "super gem" Fittings, which can be detached and reused. Write for Bulletin 1EB-26A.

\*DuPont trademark for its tetrafluoroethylene resin.  
"super gem" is an Aeroquip Trademark.

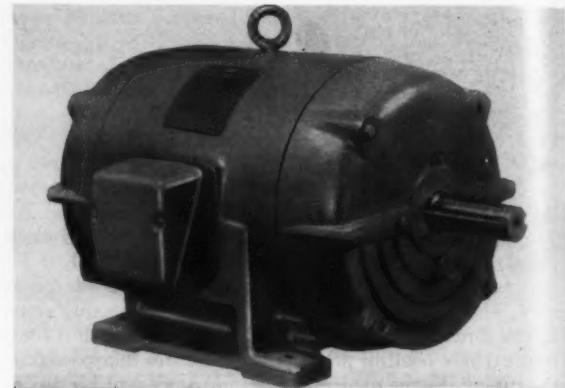
**Aeroquip**

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AEROQUIP (CANADA) LTD., TORONTO 18, ONTARIO

... for more details, circle No. 66 on Reader Service Postcard

### SYNCRO-SPEDE MOTOR

... has induction acceleration, synchronous run



Available in ratings from 1 to 100 hp. in any type enclosure, this motor accelerates as an induction motor but runs at synchronous speed without permanent magnets or d-c. excitation. Syncro-Spede, according to the manufacturer the first synchronous induction motor built in the same NEMA frame size as a standard motor of equal horsepower, is a compact a-c. unit suitable for use on applications requiring constant speed with varying load. The motor can be foot or flange-mounted horizontally or vertically. *Louis Allis Co.*

... for more details, circle No. 228 on postcard

man  
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a  
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investment!



This company has made a wise investment—one which will pay many dividends over a long period of time! The man above is dropping a Magliner magnesium dock board in place on the company's dock. This new Magliner will speed loading . . . get more out of power trucks and other loading equipment . . . keep costs down! Made of light, strong magnesium, it will protect men, loads and equipment against accidents and costly damage. It will also pay other big dividends! Magliners are low in initial cost—and because they provide dependable, long-life service with less maintenance they give you greater economy *ALL* ways! Find out today, how Magliner dock boards can cut costs in your operation. Write for Bulletin DB-204!

**MagLiner**  
MAGNESIUM  
DOCK BOARDS

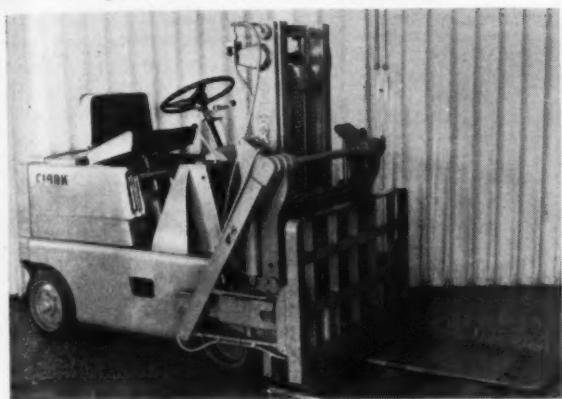
MAGLINE INC. • P. O. BOX 612 • PINCONNING, MICHIGAN  
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... for more details, circle No. 67 on Reader Service Postcard

**PUL-PAC ATTACHMENT**  
... for palletless material handling



Designed for use on Clark fork trucks, the Pul-Pac attachment consists of a load carrying plate, pusher rack and gripper jaw. Loads are carried on a thin steel sheet instead of conventional pallets. A flap at the edge of the sheet is gripped by hydraulically actuated jaws and the sheet, plus its load, is pulled onto the load carrying plate. The upright pusher rack, which has up to 50 in. of forward travel, handles load removal. Pul-Pac capacities vary from 1,800 to 3,700 lb. at 24-in. center, depending on the capacity of the truck. *Clark Equipment Co.*

... for more details, circle No. 229 on postcard

**ADHESIVES**  
... for bonding treated Teflon

Three adhesives have been developed for bonding treated Teflon, which has a smooth, waxy surface, to itself or to other materials. All three meet the requirements for strength, chemical resistance, flexibility and temperature resistance for all Teflon bonding applications. Adhesive R-86004, a thermosetting, two-component adhesive, is recommended for use where maximum chemical resistance is required, while R-86024 is recommended for dry applications. R-81001 is a thermosetting adhesive for bonds that must endure heat or be flexible. *Raybestos-Manhattan, Inc.*

... for more details, circle No. 230 on postcard

**PUSH-BUTTON UNIT**  
... controls machine welding



This push-button weld-cycle control unit was designed to provide programmed control of all functions of machine welding. Consisting of a main panel which contains all of the adjustable control mechanisms and a push-button remote control station, the system is for use with high-frequency current and d-c. straight-polarity welding power from a saturable reactor-controlled, rectifier-type supply. The control is designed for applications requiring precise weld timing and crater filling on repetitive circumferential or longitudinal welds. Control timing mechanisms are set in advance. *Air Reduction Pacific Co.*

... for more details, circle No. 231 on postcard

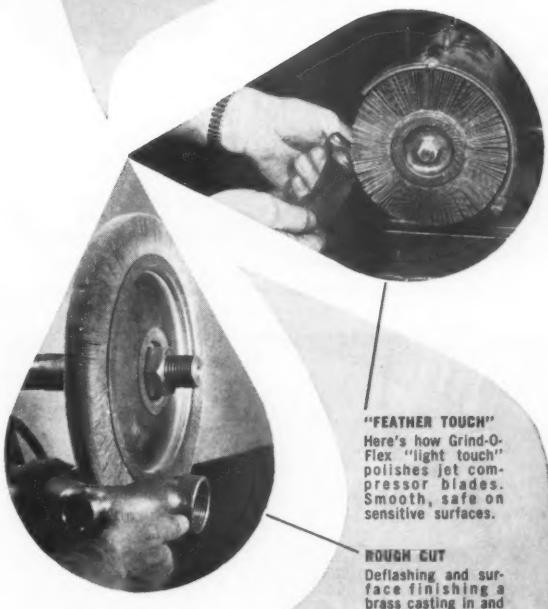
**NEW...**

**GRIND-O-FLEX**

Rugged . . . High RPM . . . More Abrasive Content . . . Greater Resilience . . . New Sizes

**WIDE  
WIDE  
CHOICE**

of flexible abrasive wheels



**"FEATHERED TOUCH"**  
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**ROUGH CUT**  
Deflashing and surface finishing a brass casting in and around contours. Fast! Thorough!

**WE'VE GOT IT . . .**  
**Big to Little, Fine to Coarse**

Now the new new Grind-O-Flex wheels are here! New, high durability design—an extremely rugged wheel capable of operating at higher RPM's (up to 5500 where required)

More abrasive per wheel—longer abrasive flaps for longer life, more resilience, faster cutting.

Grind-O-Flex wheels are available in 3" to big 16" diameters for automation, widths up to 6". Grind-O-Flex wheels shape themselves to the job—get in and around complex contours and hard-to-reach places...will not "flat" or dig...fits any rotating spindle. There's a grit, diameter and width to fit your every polish or grind requirement.

Just off the Press: Complete Grind-O-Flex Brochure. Write for it Today.

**merit products inc.**  
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... for more details, circle No. 68 on Reader Service Postcard



# Hydraulics

ALL PRESSURE RANGES

CIRCUIT LAYOUT

SYSTEM DESIGN

FABRICATION

COMPLETE STOCK

PARTS-SERVICE

"A working  
team for  
Industry"

## THE DYNEX PF 6006 PUMP

### FEATURES:

Any one, or all, pistons can be isolated, providing up to 6 independent power sources. Versatility! Excellent for mobile and industrial use — and recommended with aircraft fluids. That's why we employ Dynex piston-type pumps in standard and specialty-designed high-pressure systems.

The PF 6006 is one of a series of Dynex units that deliver from 1½ to 22 GPMs — rated for continuous duty at 6,000 PSI — intermittent service to 8,000 PSI. Ask us about them . . .



... for more detail, circle No. 69 on Reader Service Postcard

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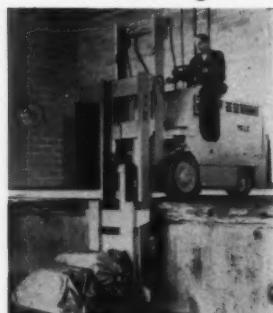
**Hassall**



... for more details, circle No. 70 on Reader Service Postcard

## SPECIAL LIFT TRUCK

### ... for below-ground-level handling

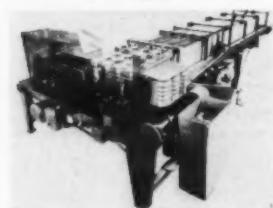


Handling in pits, lowering palletized materials into tanks, or transferring material on varied floor levels are a few of the jobs possible with this lift truck which has channels that lower below ground level. The truck can handle loads off a level 72 in. below the floor and raise them to 41 in. above ground level. The primary lifting channels are supported secondary lift channels attached to a fork carriage at the top of the primaries. Each channel assembly has its own lifting cylinder and set of controls. Unit's overall height is 83 in. *Yale & Towne Mfg. Co.*

... for more details, circle No. 232 on postcard

## END-OPEN CASER

### ... for single tier can loading

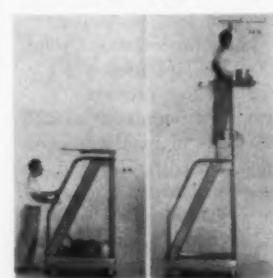


Torn and scratched labels, dents and split seams are all eliminated by this end-opening caser. Designed for single tier loading of cans into shipping cases the caser will handle 46 oz. and No. 10 cans. It has also been built for smaller cans. To form a single tier pattern the cans travel in an upright position on a wire mesh belt conveyor through divider lanes into the loading chamber. When a loading tier has been fully assembled and a shipping case positioned, a pusher plate automatically slides the tier into the case. Speed is about 1,200 cans an hour. Automatic safety features guard against incomplete loading and the discharging of a tier of cans when the shipping case is not in the proper position. *Food Machinery & Chemical Corp.*

... for more details, circle No. 233 on postcard

## MOBILE LADDER TRUCK

### ... rolls supplies up to work area

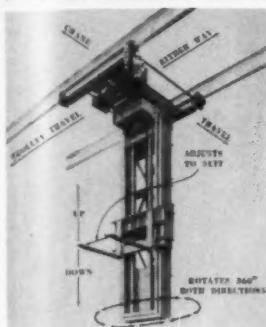


For faster, safer overhead building maintenance in the 7 to 14 ft. range, this mobile ladder truck saves labor by rolling supplies right up to the work area, going through doorways and into elevators. When the operator steps on the first step, the front casters are retracted automatically allowing unit to rest on skid-proof legs. There is four-way guard rail protection so that both hands are free, and the upper work tray adjusts to safe, convenient waist level. Made with six steps, its height is 77 in. with guard rail down, provides eye-level height of 11½ ft., reaching levels to 13 ft. Other dimensions are length 42 in., width 26 in., weight 136 lb. Construction is all steel, arc welded, and surface finish is hammertone green enamel. *Safe-Lad Mfg. Co.*

... for more details, circle No. 234 on postcard

## OVERHEAD FORK

... for efficient warehouse storage



This heavy overhead fork lift was designed for handling and storing materials in warehouses and is a real help in obtaining maximum efficiency from warehouse space. Materials can be piled high and aisleways reduced in width so that more cubic footage can be devoted to storage. In warehouses where only one overhead fork is used; the handling and storing can be

handled by one man operating the unit remotely or from a cab or platform. Electrically powered, the units are available for various capacities and lifts in telescoping or non-telescoping types. Forks are adjustable for accommodating different widths of materials and can be made in various sizes and shapes for specific needs. *Cleveland Tramrail Div., Cleveland Crane & Eng. Co.*

... for more details, circle No. 235 on postcard

## SLIP-RESISTANT FLOORING

... rubber tile with high resiliency

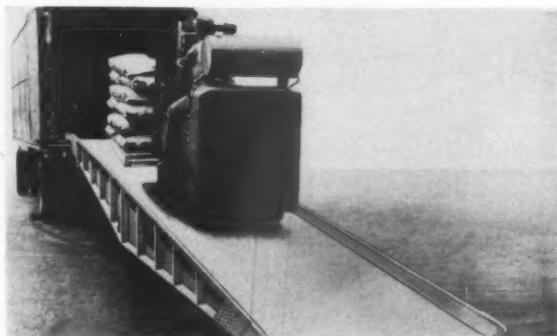
Resistant to scoring, denting, puncturing and spikes, this Tweed rubber tile also has high resiliency that makes it ideal from the standpoint of comfort and noise-reduction. Created for shops and other places where heavy traffic calls for a practical floor, it is tough, long-wearing and withstands abuse to a degree unusual in resilient tile floors.

From a safety angle, this tile is said to be the most slip-resistant floor covering made. It is available in 11 colors, lends itself readily to unique and attractive patterns. *American Mat Corp.*

... for more details, circle No. 236 on postcard

## MOBILE LOADING RAMP

... for ground and yard use



Ground level and yard handling operations are the specialty of this standard mobile loading ramp. Height adjustability ranges from 34 to 61 in. for the 36 ft. model and 38 to 61 in. for the 30 ft. model. Scuffing and gouging of power truck tires is prevented by adding tire saver side curbs, painted bright yellow for safety. Other features include hydraulic lift for quick elevation to required loading height and detachable towing bar for power truck hauling. Ramps are available in 16 standard models with capacities ranging from 7,000 to 16,000 lb. *Magline, Inc.*

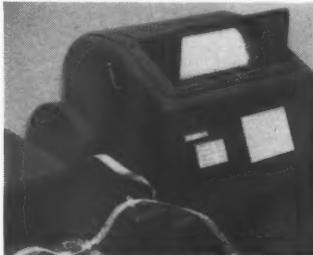
... for more details, circle No. 237 on postcard

# here's how modern communications can save time and money in your office

In this competitive era, time-saving communications can tilt the scales of business from loss to profit. To keep things running smoothly, you need the right equipment in the right place. And Pacific Telephone has the answers. Some of them are shown right here.



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**TELETYPEWRITER SERVICE** sends written messages with phone-call speed. 2-way communication with your other offices—or other firms. Can make order-handling 90 per cent automatic!

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**Pacific Telephone**

... for more details, circle No. 71 on Reader Service Postcard

## ON THE SPOT HEAT to your exacting requirements!

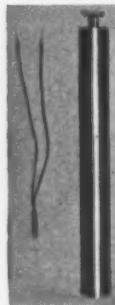


### TRENT STRIP HEATERS

for Ovens, Dryers, Kettles, Process Equipment

- Flat Metallic Tube Casing
- Ceramic Block Terminal Blocks
- No Grooves—No Heat Distortion
- Sealed End Construction

Available in a complete range of types and sizes, wattage requirements, and voltage conditions—for maximum safe surface temperatures of 750°F. and 1000°F!



### TRENT CARTRIDGE HEATERS

for Dies, Molds, Platens, Sealers, Defrosting

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- Silver Soldered End Opposite Terminals
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- Nickel Chromium Heater Coil Sealed in Ceramic Insulation
- Brass Angle, Pigtail, Rod, or Stud Type Terminals

Standard sizes from  $\frac{3}{8}$ " to  $1\frac{1}{8}$ " diameter, and  $1\frac{1}{2}$ " to 22" in length, are supplied in a range of wattage requirements for 110 and 220 volt operation.

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NOW with new **ROTO-CLIP**

permits you to detach or attach helmet  
without removing Hard-Cap from your head.  
ORDER TODAY!

KEDMAN CO., 233 South 5th West  
Salt Lake City 1, Utah

... for more details, circle No. 73 on Reader Service Postcard  
84

### PLATFORM TRUCK

... has automatic drive, 4,000-lb. capacity



For handling a two-ton load easily and safely through narrow aisles and crowded quarters, this Freightliner platform truck has fully automatic drive giving smooth power flow and excellent "inching" qualities for precise load positioning. The air-cooled engine provides 8.1 hp. at 3,000 rpm., to negotiate ramps up to 10% with full load. Design features include simplified driving controls, steering ratios of either 1 to 1 or 3 to 1, electric starting system and engine hour meter. Overall length of the truck is 105 $\frac{1}{2}$  in., with a bed size of 60 x 42 in., which has  $\frac{3}{8}$  in. slope to center to aid in keeping load from shifting. *The Hyster Co.*

... for more details, circle No. 238 on postcard

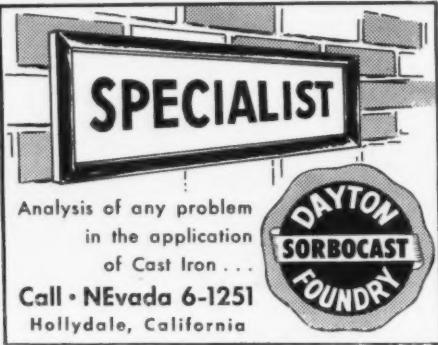
### MIDG-A-MATIC AIR DRILL

... 20,000 rpm., 1 $\frac{1}{8}$  in. stroke length



Only 10-3/16 in. long, with a one-in. diameter, this self-speed drill can be used singly or in multiple set-ups. Speed is 20,000 rpm., stroke length 1-3/8 in., and capacity, holes 1/16 in. and under. It has low center-to-center distance and operates with low air consumption, according to the manufacturer. Designed to drill small holes automatically and at low cost, it is suitable for many applications in aircraft, automotive, radio, television, etc., fields. *Aro Equipment Corp.*

... for more details, circle No. 239 on postcard



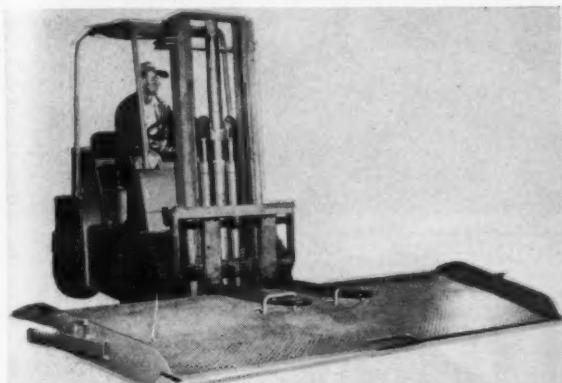
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in the application  
of Cast Iron . . .

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WESTERN INDUSTRY—December 1957

### HEAVY DUTY RAMP

... 11-ton capacity for double door box cars

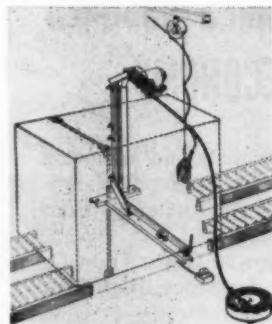


This all-steel-welded extra heavy duty ramp, with a 22,000-lb. axle load capacity for use with larger capacity fork lift trucks, is 9 ft. at car door, 13 ft. at dock, with a length of 5 ft. to provide needed space for ease of maneuvering trucks. It was designed to meet the need for larger ramps to bridge the gap between car and dock as bigger trucks are adopted with various attachments to increase size of unit loads. The ramp is engineered and designed to meet all safety requirements, has positive ratchet locking devices, dual lifting stirrups, channel understructure and a tensionized curved crown. *Roll Rite Corp.*

... for more details, circle No. 240 on postcard

### STRAPPING UNIT

... feeds up to 240 ft. per min.



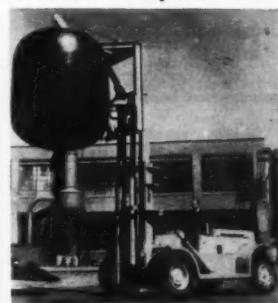
This power strap feeder can feed steel strapping vertically around packages, skids, crates or bundles at a rate of up to 240 ft. a minute. When used with power operated strapping tools it will apply up to 200 straps an hour. Called the Model PSF-1, it will handle a wide range of package shapes and sizes, as well as feed straps through openings in skid runners. Powered by

a 1/4-hp. electric motor, the strap feeder can be adjusted to handle strapping from 5/16 x .012 in. to 3/4 x .035 in. Excess strapping is fed back to the coil, thus preventing waste. *Signode Steel Strapping Co.*

... for more details, circle No. 241 on postcard

### HANDLING BOOM

... for collapsible containers



Designed to lift and carry all sizes of collapsible containers up to 370 cu. ft., this handling boom fits all Clarklift trucks from model CY-200 (20,000 lb. capacity) to the CY-350 (35,000 lb.). The boom is an integral part of the upright and its lifting height of 180 in. permits loading on highway trailers. *Clark Equipment Co.*

... for more details, circle No. 242 on postcard

## SLASH MACHINING COSTS!



with EATON-RELIANCE

### Snap Rings

Machining costs can be reduced without reducing product quality. This is specifically true where Eaton-Reliance Snap Rings are used instead of shoulders on shafts and in counterbores. How are the savings made? Eaton-Reliance Snap Rings allow shafts to be ordered to size rather than oversize. The metal taken from the small groove required for the snap ring is negligible compared to the amount wasted in machining an entire shaft. The time it takes to machine a groove is only a fraction of that needed to fully machine a shaft either externally or internally. These time and material savings add up to dollars.

Eaton-Reliance Snap Rings are being used successfully in industry throughout the country. They are designed for long life, made of steel, cold drawn in our own plant, and quality controlled from start to finish. You can rely on Reliance Snap Rings.

Send for your free copy of Engineering Bulletin No. 55 or write for the name of your nearest Eaton-Reliance representative.

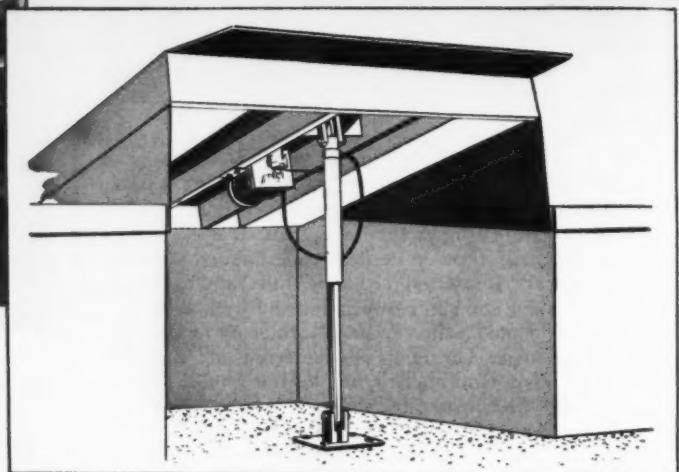


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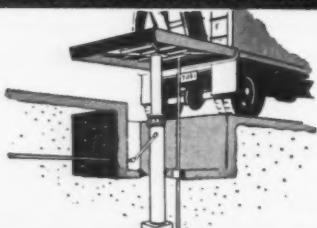
Representatives:  
Hobelmann & Co., Inc., 225 Kansas St., San Francisco 3, Calif. — Grether & Grether, P.O. Box 47, Stockton, Calif. — P.O. Box 1036, Whittier, Calif.

... for more details, circle No. 75 on Reader Service Postcard

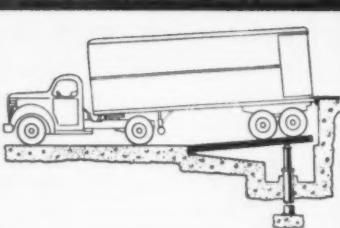


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### GLOBE TRUCK LEVELER



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There's no waiting to "bridge the gap" for loading and unloading when you use Globe Trans-O-Matic Ramps. These hinged Ramps are instantly in position... provide a strong, smooth bridge from dock to truck bed regardless of difference in levels.

The unmatched design and sturdy construction of Globe Trans-O-Matic Ramps assure you long, satisfactory performance. High load capacity—up to 20,000 lbs. for either cross-over or roll-over—is made possible by Globe's box and channel design. Ramp lip "floats" with vehicle bed 15" up or down. Automatic safety lock instantly holds Ramp in fixed position if truck pulls out accidentally... prevents dumping, injury or damage. Two models, either electric or air-oil, are available.

Write today to Globe Hoist Company for complete data on automatic, adjustable Globe Trans-O-Matic Ramps, and other Globe Industrial Lifts designed for faster, safer materials handling. Information is also available in Sweet's Plant Engineering Catalog.

**GLOBE.**  
**AUTOMATIC ADJUSTABLE**  
**TRANS-O-MATIC RAMPS**

PLANTS: DES MOINES—PHILADELPHIA—LONG BEACH, CAL.

... for more details, circle No. 76 on Reader Service Postcard

WESTERN INDUSTRY—December 1957

# THE INDUSTRIAL WEST ON ITS WAY

plants • production • distribution • personnel

## \$10,000,000 Expansion for Union Pacific's Portland Freight Yards

PORLAND — Union Pacific's Albina Yards here will have 50% more capacity with the completion of its present major expansion program, which will cost over \$10,000,000.

Twenty-five new tracks, involving some 82,000 ft. of trackage, with 50 switches, will have a capacity of 1,750 freight cars. Additional tracks will be added later for a total of 53.

When completed, the new terminal will provide a flat switching yard with a capacity of 3,280 cars. Other phases of the program include a new diesel engine house at Albina and replacement of the company's present building on N.W. Front Ave. A 1,000-ft.-long car repair shop is planned for the area along the Willamette River near the U.P. Dock.

## United Biscuit to Build \$8,000,000 Denver Factory

DENVER—United Biscuit Company's Bowman Division has announced plans for an \$8,000,000 factory in northwest Denver. The company hopes to break ground for the facility next year, according to *J. Clinton Bowman*, president and general manager of the division.

Located on a 42-acre site, the factory is to be a one-story structure 1,200 ft. long, with three traveling band ovens. Bowman distributes 130 varieties and sizes of crackers and cookies in a seven-state area.

## Huge Missile Plant for Aeronutronics

ORANGE, CALIF.—Aeronutronic Systems, Inc., Southern California subsidiary of Ford Motor Co., has announced immediate construction of a multi-million dollar missile plant in Newport Beach, on a 200-acre site between MacArthur Blvd. and upper Newport Bay.

The facility, which will eventually accommodate 3,000 engineers and scientists, will include a seven-story office building, surrounded by a series of aero-thermochemical laboratories.

April occupancy is scheduled for the first unit. *Gerald J. Lynch* is president of the firm, which has central offices at 1234 Air Way, Glendale.

## West Houses World's Largest Automatic Tire Curing Facility

LOS ANGELES—The West is now the home of the world's most fully automatic tire curing facility, the \$7,500,000 vulcanizing plant recently opened by Goodyear Tire & Rubber Co.

Built to meet the growing needs of Western automobile assembly plants, the new facility houses 88 automatic tire-curing presses with 176 molds and is the first installation to apply automation to the loading and unloading of the intricate automatic presses.

Operation of the new facility is being directed by *Marshall Gillespie*, Los Angeles plant manager. *Robert W. Maney* is vice president of Goodyear's Western division.

The recently completed one-story building, 140 x 150 ft., is connected by a tunnel and conveyor system to Good-year's main factory at 6701 South Central. The more than five miles of piping required by the curing equipment is in the building's basement, which covers over 61,000 sq. ft. Chain conveyors carry uncured tires into the new plant and other conveyors automatically transfer tires to curing molds and other production stations.

Production at Los Angeles includes tires for passenger cars, heavy trucks, buses and farm tractors, as well as air foam rubber, rotary hose, airplane fuel cells and other molded and extruded rubber items.

Total annual output is some 130,000,000 lb. Valued at over \$52,000,000, the Los Angeles plant employs about 2,800 persons, with a yearly payroll of some \$15,000,000.

## Day-Brite Lighting Buys Land for Big Plant

SUNNYVALE, CALIF.—Day-Brite Lighting, Inc. of California, has announced purchase of a large tract of land on Kifer road here, where it intends to build the West's largest, most modern facility for the manufacture of lighting fixtures. Announcement of the purchase was made by *Stanley M. Bixley*, vice-president of the firm, a subsidiary of Day-Brite Lighting, Inc., St. Louis. It is expected that the new plant will employ several hundred.

## Dole Sells Container Plant In Hawaii to Weyerhaeuser

HONOLULU—Dole Hawaiian Pineapple Co. and Weyerhaeuser Timber Co. have announced agreement for the sale of Dole's corrugating and shipping container plant here to the Weyerhaeuser Hawaiian Co., newly formed subsidiary of the Tacoma, Wash., firm. Effective Dec. 31, the sale includes land, buildings, equipment and present inventories. Total purchase price will exceed \$2,000,000.

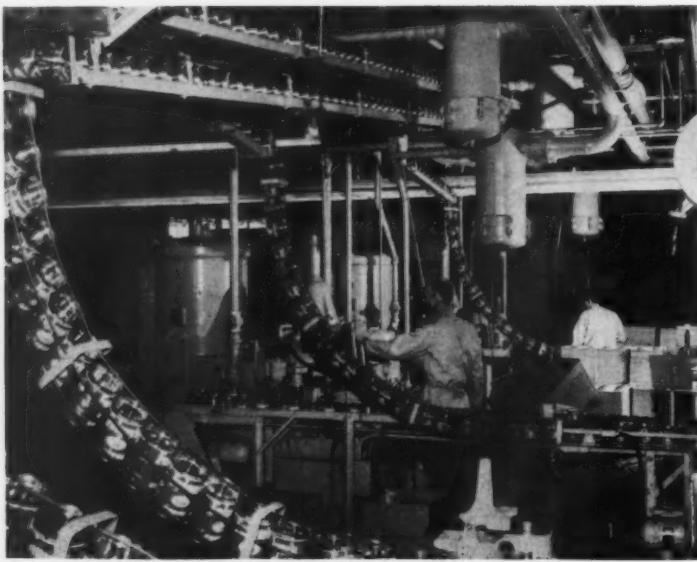
Purchase and operation of the plant by Weyerhaeuser will permit service to other users of shipping cases in Hawaii, at the same time assuring Dole of a continuing supply.

The 15-year-old plant will be modernized, its capacity enlarged, and new equipment added for production of a wide variety of containers. The plant will be physically separated from Dole's pineapple plant and operated independently. Present employees at the plant will be offered employment with Weyerhaeuser.

## Ultradyne, Inc., Buys Quantum in Albuquerque

ALBUQUERQUE, N. MEX.—Ultradyne, Inc., specialist in design and manufacturer of electrochemical instruments, has announced purchase of Quantum, Electronics, Inc., here. According to *P. K. Church*, Ultradyne president, purchase of Quantum, which specializes in transistor and solid state circuit design, will add d-c. to d-c. power supplies, junction and power transistor analyzers, and constant current power supplies to Ultradyne's present line. To be known as Quantum Electronics, a division of Ultradyne, Inc., the new unit will be headed by *T. E. Lomasson*, president and treasurer of the firm before its purchase.

## Automation for All Major Operations in New Folger Coffee Packing Plant



**GRAVITY FEED**—That's how cans flow from overhead conveyor at new Folger plant.

**LOS ANGELES**—You may be getting automation with your morning cup of coffee this month—or at least the results of it—since the most completely automated coffee packing plant in the world was just put in operation by J. A. Folger & Company to serve its Western markets.

Representing the last word in applying automation to coffee processing and packaging, the Los Angeles plant at 17600 S. Sante Fe Ave., occupies 135,000 sq. ft. and has a rated output capacity of 360,000 lb. of vacuum-packed coffee annually. Guests at the plant's recent dedication saw a plant so fully automated that it is unnecessary for the human hand to touch the coffee once it is unbarged and sent on its way to be roasted, blended, ground and vacuum-packed into containers. A normal working inventory of 20,000 bags of green coffee was on hand as the plant opened.

Civic and government officials, representatives from the Latin American coffee countries, and retail grocery organizations, and Folger officials were on hand for the ceremonies, with some of them operating switches that set the vast automation process in motion.

A floor-level conveyor system for unloading, air-jet and automatic screens for cleaning green coffee, giant Burns roasters that can handle 9,000 lb. an hour and Gump grinders that granulate

### Lamson Service Department Moves to Portland

**PORLTAND** — Lamson Mobilift Corp., builders of industrial trucks, has recently moved its service department headquarters from Chicago to the factory location here, according to John R. Titlow, vice president. The service department is headed by Floyd M. Mayse, formerly district manager for the west central region and supervisor of the Lamson Mobilift Chicago branch.

4,000 lb. per hour are some of the advanced equipment at the plant.

Closure equipment includes the coffee industry's largest-vacuum-closing machines, seven-ton units made by the American Can Co., that operate at 120 cans per min. Latest-design can-handling systems, also by Canco, permit bulk-handling of containers using the palletizing system. Warehousing and shipping operations, like all of the plant's major operations, employ automation techniques and equipment.

### Thermoid Co. Opens New Western Warehouse

**SOUTH SAN FRANCISCO**—A new warehouse at 129 Sylvester St., that will permit quicker, more economical distribution of its products has been opened by Thermoid Co., according to an announcement by the firm's Trenton, N. J., headquarters.

The move, from a former San Francisco location, affords Thermoid some 20,000 sq. ft. of storage and shipping space, plus 1,800 sq. ft. for office facilities, and an adequate parking area. Both automotive and industrial sales representatives will operate from the new location, which will maintain a complete stock of Thermoid's products, along with facilities for hose coupling and custom slitting of transmission belting.

J. Dale Evans is managing the new unit, which will service jobbers and dealers throughout Northern California and adjacent areas.

## California Labor Attracts Industry

**SAN FRANCISCO**—California's high labor efficiency potential, plus its existing maturity in labor-management relations, are its greatest attractions to new industry, the more than 300 participants in a recent industrial development conference were told by C. J. Haggerty, a California State Federation of Labor officer.

He was one of several speakers at the Oct. 30 conference, "Industry and Your Community," held at the Villa Hotel in San Mateo under sponsorship of seven statewide and local organizations, including the American Institute of Planners, California Real Estate Association, County Supervisors Association of California, League of California Cities, San Francisco Bay Area Council and the San Mateo County Development Association. The all-day conference marked the first time in the state labor has joined in sponsoring a statewide industrial development conference.

Haggerty said that the California labor force, on the average, has a two-year higher level of formal education than the nation as a whole, and discussed what advantages this presented. He also emphasized the need for a more balanced growth pattern in industrial development.

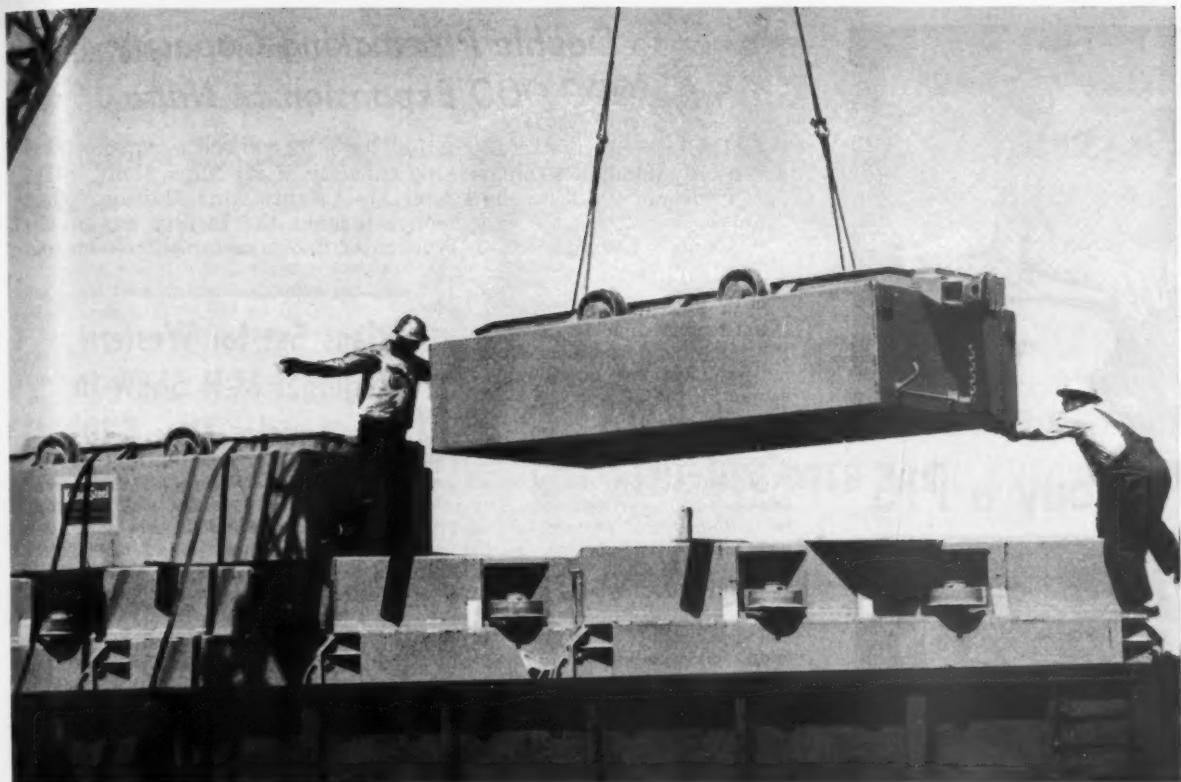
### U. S. Borax Starts Operation of First Open Pit Boron Mine

**LOS ANGELES**—First open pit mining of boron, a method that allows practically 100% recovery of ore, began full scale operations when United States Borax and Chemical Corp. recently dedicated its \$20,000,000 open pit mine and refinery at Boron, Calif., in the Mojave Desert 130 miles northeast of here.

More than 70% of the world's supply of this industrially and scientifically important ore is located in a huge deposit at the 80-acre site of the facilities, under construction for two years. Some 90,000 tons of earth were removed in digging the pit to the ore deposit at a depth of 137 feet. The pit is now 175 ft. deep.

### Enlarged Plant to Speed Up Delivery of Cannon Products

**SANTA ANA, CALIF.**—Cannon Electric Co. has announced faster delivery of its volume plug lines on start of production at its new \$1,250,000 plant. Facilities of the 106,000-sq. ft. installation are designed for mass production items, according to Cliff Anderson, general manager. Located on a 30-acre site, the plant is expected to employ 1,500 people within three years. It is one of nine world-wide sources of Cannon plug products.



### COAL CARS FOR SUNNYSIDE, UTAH, MINES

DESIGNED AND FABRICATED BY

**KAISER**   
**STEEL**

FABRICATING DIVISION

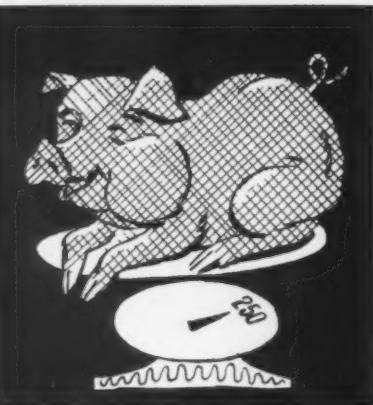
NAPA, FONTANA, MONTEBELLO, CALIF.

"Easy does it" as the last of 375 new all-steel cars is swung aboard a railroad gondola for shipment to Kaiser Steel's Utah coal mines. Their mission: to replace older cars in the hauling of coal from miles underground to the surface. Designed and fabricated at Kaiser Steel's own Fabricating Division

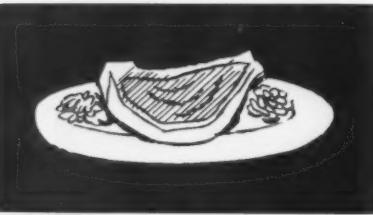
plant at Napa, Calif., these cars feature a special bottom of high-strength Kaisaloy steel plate in order to withstand the punishment of their continuous "load-haul-dump" operation. For further information write: Kaiser Steel Fabricating Division, Napa, California.

STATISTICS: LENGTH, 12' 7"; WEIGHT, 5150 LBS.; CAPACITY, 8 TONS

... for more details, circle No. 77 on Reader Service Postcard



## Why buy a PIG



## to get a PORK CHOP?

Ridiculous? It sure is. But it's just as ridiculous to buy a vibrator and then pay to have it shipped out to the West Coast. Cleveland Vibrator Co. has a complete stock of air and electric vibrators in our San Francisco warehouse, ready for immediate shipment.

All sizes and types of Cleveland Vibrators are available. Our competent engineers will be glad to assist in making recommendations on the use of Cleveland Vibrators at your plant.

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90

## Kaiser to Double Pipemaking Capacity with \$2,000,000 Expansion at Napa

OAKLAND—Start of construction for a \$2,000,000 expansion that will nearly double the pipemaking capacity of its Napa, Calif., plant has been announced by the Kaiser Steel Fabricating division. When completed in 1959, the expansion will make the facility one of the world's largest plants for fabrication of line pipe for petroleum and gas transmission.

Soule Steel Co. is building the additional facilities and Raymond Concrete Pile Co., the foundation. Kaiser will build and install its own new production equipment for the plant.

Aimed at keeping pace with the demand for large diameter line pipe, especially for proposed pipelines in the West and Canada, the expansion will enable Kaiser to produce pipe up to 42 in. in diameter. It now produces electric weld pipe from 6 1/2 to 20 in. in diameter and expanded fusion weld pipe of 20 to 36 in. diameter.

Major facilities under construction include a 50,000-sq. ft. structure to house additional welding, facing, expanding and testing facilities, new buildings and more handling and storage areas.

Doubled capacity is anticipated also at Kaiser's Fontana steel mill on completion of its current \$194,000,000 expansion program, now at the half-way stage.

### Multi-purpose Industrial District Planned in L. A.

LOS ANGELES—Development plans for a \$2,000,000 multi-purpose industrial district at 2010 S. Alameda St. have been announced by the Gateway Co. Occupying the former site of the Hammond Lumber Co., the area will be called the Hammond Industrial District. Comprised of about 30 acres to be divided into sites and zoned for most types of industry, it is expected to attract warehousing facilities, metal and wood fabrication, plastics, chemical and similar manufacturing operations.

## Plans Set for Western Regional M-H Show in Los Angeles May 8-10

LOS ANGELES—Officials of the Second Western Regional Material Handling Show May 8, 9 and 10 have announced completion of final plans for the colorful exposition to be held at the Great Western Exhibit Center, Santa Ana Freeway at Atlantic Blvd.

*Joe Druliner*, show chairman representing the Los Angeles Chapter of the American Material Handling Society, said the show has full approval and endorsement by the National organization and should prove to be the finest and most productive ever presented in the West.

"We expect to have full representation from just about everyone connected with the material handling and industrial packaging phases of industry, with delegates from business, manufacturing industrial operations, government, armed forces and every other source," said Druliner, who is chief facilities engineer at Norris Thermador Corp.

*William E. Kapper*, national AMHS president, said they expect that Los Angeles will be, for three spectacular days, the national headquarters for more material handling and industrial packaging men than were ever before assembled.

Plus the large display of exhibits covering the smallest component designed for handling of material to the largest earth-moving equipment, the show will have conferences, seminars and the National Fork Lift Championship Rodeo. More than 520 exhibit spaces are now being offered for the show, which will be produced by Byron Perkins and Jack Lee, 2807 Sunset Blvd.

**Contractors**

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### Harvey Aluminum Gets New San Diego Address

SAN DIEGO—New address for the sales engineering office of Harvey Aluminum here is 2108 Fifth Ave., following a recent move. *Charles Hayes*, district sales manager, is in charge. Harvey's general offices and mill are in Torrance, Calif., and a reduction plant is under construction at The Dalles, Ore. Products include aluminum rod and bar, extrusions, forgings, special shapes, and similar items in titanium and steel.

## Expansion at Ryan Will Double Capacity

TORRANCE, CALIF.—Ryan Aeronautical Co. will more than double its present plant capacity here with a recently-announced expansion program that calls for erection of three large structures. Largest single plant expansion project of recent years, it will provide 140,400 sq. ft. of floor space, bringing the total plant area to 1,500,000 sq. ft.

An \$814,000 contract has been authorized for the construction, which will include an assembly building, a shipping-receiving and tool fabrication and repair building, and a two-story addition to the present office quarters.

Ryan required additional space for Firebee missile production and work on Douglas DC-8 Jetliner jet engine "power packages" and pylon assemblies, already being manufactured in Ryan's San Diego plant. Eventually, assembly of these components will be transferred to Torrance.

The expansion is expected to result in enlargement of the Torrance work force from about 400 to approximately 1,000 next summer, and about 1,700 at a peak early in 1959. The firm has also recently added over 13,000 sq. ft. to its San Diego plant.

### New Denver Quarters for Electric Steel Foundry

DENVER—Operating from a new office and warehouse in this city's Mile High Industrial center is Electric Steel Foundry Co., Portland, which moved in mid-November to quarters at 3940 Grape Street.

With the move Esco announced it will carry stocks of stainless steel sheet, plate, pipe, tubing, bar, fasteners, valves and fittings, plus a complete line of polyvinyl chloride plastics. In the Denver area, Esco represents several manufacturers, including Armcro Steel, Carpenter Steel, Tube Turns and Tube Turns Plastics, B. F. Goodrich and Rigidized Metals Corp.

Office manager in Denver is Roy Orchard; Gordon Ley is district manager.

PROTO TOOLS

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WESTERN INDUSTRY—December 1957



## DURABLA REDUCING COUPLINGS NOW AVAILABLE FOR USE WITH BASIC CHECK UNITS

this combination is all you need to form  
a low cost, all stainless-steel check valve

Now, you can get DURABLA Reducing Couplings to match DURABLA Basic Check Units. Supplied in line sizes from  $\frac{3}{8}$ " to 2", they are recommended wherever a complete stainless steel (18-8) line check valve is required.

There has been no change in the Basic Check Unit. It can still be used with *any standard pipe fitting* or, now, with a DURABLA Reducing Coupling. In either case, you have a complete check valve that will operate in any position—horizontally, vertically (with the inlet either up or down), and at any angle between. Suitable for almost any service—over a wide range of pressure-temperature ratings.

With a few of these units in stock you can meet practically any check valve emergency. For the full story, send for a copy of new 8-page bulletin WE127.

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Basic Check Unit  
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Reducing Coupling



Complete Check Valve

# DURABLA

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DM-31

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91

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P. F. O'Donnell Co., 2298 Jerrold Ave., San Francisco; Keville Ind. Service, 1590 Gainesha Place, Pomona; Equipment Supply Co., 16 Post Office Place, Salt Lake City; Equipment Engineering Co., 1400 Ruth Drive, Thornton, Colorado; Stryco Sales Inc., 312 Industrial, N.E., Albuquerque; Hallidie Machinery Co., 1915 N.E. Union, Portland; Preston Faller Co., 1921 Minor Ave., Seattle; Liftco, Inc., 4324 East Trent Ave., Spokane.

**WEST BEND EQUIPMENT CORP.**  
MATERIALS HANDLING ENGINEERS

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## Meyer Co. Breaks Ground for Los Angeles Facility

LOS ANGELES—Ground was broken recently at 2060 Garfield Ave. for a new office, warehouse and bulk storage facilities for Wilson & Geo. Meyer & Co. and Wilson Meyer Co., sales representatives for Eastman Chemical Products, Inc., and for Eastman's Kodapak sheet. Cost of the new quarters is about \$500,000, and completion is scheduled for February. The facility will double the Meyer firm's present space at 4800 District Blvd.

## Open House Held by Metallurgical Consultants

LOS ANGELES—One of the largest commercial brazing furnaces in the West was viewed by visitors attending an open house held by Metallurgical Consultants, Inc., 4935 E. Slauson Ave., Maywood. The large electrically-heated furnace can provide controlled temperatures up to 2,250 deg. F., and handle parts up to 40 in. in diameter and 36 in. high. The firm's recently-expanded facilities also include equipment for heat treating, brazing and other specialized work with metals.

## Two New Pabco Branches

SAN FRANCISCO—Opening of two new district sales offices for the Pabco Floor Covering division of Fibreboard Paper Products Corp. has been announced by E. W. Fish, vice president and general manager of the division. One will be in Los Angeles, with Edward T. Wells as manager; the other in Dallas, with Edward K. Gleason as manager.

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## Monarch Rubber Moves Western Office to San Jose

SAN JOSE—The Western regional office of the Monarch Rubber Co. has moved from Hayward to expanded facilities at 1045 N. 10th St. here, announced Don Roach, manager.

New facilities include offices and a warehouse (formerly at Reno, Nevada). Also, inventory has been increased by one-third, said Roach.

## Amercoat Purchases Site

LOS ANGELES—Proposed site of a manufacturing facility for the Amercoat Corp. is a 14-acre Brea site recently purchased by the firm, a subsidiary of American Pipe & Construction Co. Present plant location is 4809 S. Firestone Blvd., South Gate, Calif.

## Dedication Ceremony for Atomic Power Station

PLEASANTON, CALIF.—Formal dedication ceremonies were held here Nov. 25 for the Vallecitos developmental atomic power station, a joint project of General Electric Co. and the Pacific Gas & Electric Co. The world's first privately financed atomic electric power plant, it began operation in October and is currently providing 5,000 kw. of power for distribution over the PG&E system. Electricity is produced by steam created in the GE boiling water power reactor and fed to the PG&E conventional turbine generator.

## Seattle Award for Ryerson

SEATTLE—Joseph T. Ryerson & Son, Inc., was awarded a bronze plaque for outstanding achievement in Seattle's 1957 United Good Neighbor Fund Campaign. Employee participation at Ryerson was 96%, and 85% of employees contributed amounts suggested to them.

## PLUMB



## NAIL HAMMERS

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WESTERN INDUSTRY—December 1957

## New Titan Mill Speeds Delivery of Brass Products

SAN FRANCISCO—Materially shortened delivery time and reduced transportation costs on brass products used by industries in the 11 Western states are made possible as the new Titan Metal brass mill hits full production this month.

Free-cutting brass rod, extruded brass shapes, brass forging rod and unmachined brass and aluminum forgings are produced at the recently-completed \$3,000,000 mill located at Newark, in nearby Southern Alameda County.

Annual output of the new mill ultimately should exceed 25,000,000 lb. of brass and bronze products. Large stocks of other items—rectangular shapes, welding rod and brass wire—made at Titan's headquarters plant at Bellefonte, Pa., will also be stocked here.

Titan's new Western division facilities cover 89,300 sq. ft. on a 40-acre site and include an L-shaped plant building, an adjoining office structure and storage space for acids used in the plant and for equipment to neutralize acid wastes.

## Training Course Given by Water Conditioner Firm

SAN FRANCISCO—Rookies and pro's in the battle against scale and corrosion in water conduction equipment exchanged ideas here recently when Packard Water Conditions held a week-long training and discussion session.

Designed to train sales representatives of the firm and to present the facts on Packard's widely discussed method of combating scale and corrosion, the meetings were attended by representatives from California, Nevada and Utah, as well as interested engineers from local industry.

Weldon D. White, technical advisor for Packard Water Conditioners, Inc., of Jacksonville, Fla., conducted the meetings. Technical data and case histories covering various adaptations of usage for the system's products were presented. Bay Area representatives for the company are Water Conditioners of Calif., Inc., 973 San Pablo, Albany, Calif.

## New Plant Engineer Facility at Oakland Army Terminal

OAKLAND—Recently opened at Oakland Army Terminal was a plant engineer facility which covers eight acres and cost \$798,000. Housed in the addition are facilities previously scattered throughout the 700-acre terminal area. These include machine, carpentry and masonry shops, a warehouse, administrative building, and a railroad siding.

## WESCON, WCEMA and IRE Move to Combined Office

LOS ANGELES—New and larger quarters were occupied this month by three electronics groups which have combined activities for operational economy and better coordination of their widely diversified functions. The move, to 1435 S. La Cienega Blvd., was made by WESCON (Western Electronic Show & Convention), the Los Angeles section of the Institute of Radio Engineers and the West Coast Electronic Manufacturers Association, after a year of combining their operations.

## \*Mohawk Rubber Schedules Tire Plant in Stockton

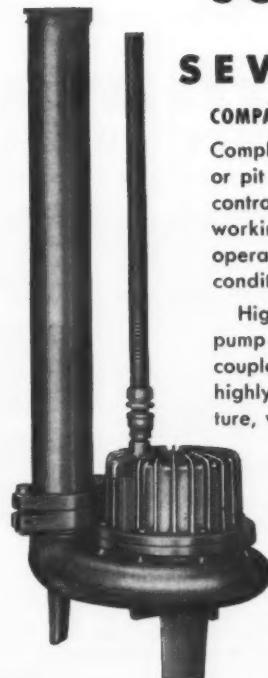
STOCKTON, CALIF.—A ten-acre site on Sharps Lane here has been chosen as the location for a multi-million dollar plant to be built by Mohawk Rubber Co., which will close its present Littleton, Colo., facility.

Mohawk, manufacturer of tires and tire recapping material, anticipates initial employment of about 200 men to produce camelback, a recapping material. Later expansion for tire manufacture will call for an additional 100 employees.

Production at the Stockton plant is expected to begin in about six months.



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## Market Development Unit Scheduled by Shell Chemical at Bay Area Site

SAN FRANCISCO—Announcement that it will build a new market development unit near its present chemical plant at Martinez, Calif., was made recently by Shell Chemical Corp., New York. The new unit for making semicommercial quantities of chemical products will be constructed on Shell's 13-acre plot adjacent to its 625-acre refinery on the outskirts of the Bay Area community.

E. W. Casagrande, Martinez plant manager, said the proposed plant will facilitate the growth of new chemicals from the laboratory stage to commercial production. The facility will consist of several reactor systems with numerous purification units which can be interconnected to utilize most of the known unit processes and operations to produce a wide variety of products, giving Shell increased capacity for manufacture of new products resulting from research and needed by industry.

Presently, the Martinez plant produces 16 different solvents, industrial alcohols, resins and plastics. Annual output is some 60,000,000 lb., with a work force of 280 persons. Shell also has market development units at Houston, Denver and at Torrance, Calif., where there are synthetic rubber and latex pilot units.

### Fence Firm Changes Name

PORLAND—The name of Northwestern Fence Co. has been changed to Furlong Fence Co., according to a recent announcement by Jack Furlong, company manager.

### PREMMCO to Represent Topp in Northern California

ALAMEDA, CALIF.—Product Research Engineering Manufacturing and Marketing Corp. has been appointed Northern California representative for Topp Manufacturing Co. of Los Angeles, manufacturer of electronic, avionic and automation equipment. PREMMCO also represents Heli-Coil Corp., Danbury, Conn., manufacturer of precision-formed screw thread inserts and related tools. Both manufacturing firms are divisions of Topp Industries, Inc., Beverly Hills, Calif. PREMMCO's northern office, opened in November, is at 2933 Marina Drive

### New Oregon Plant for R T & E

TIGARD, ORE.—A \$250,000 plant is under construction here by the R T & E Company, Waukesha, Wis., manufacturer of electric power transmission equipment. The new plant will employ about 150 persons and is slated to go into operation next spring.

### Spokane Is New Union Oil Division Headquarters

SPOKANE—The Union Oil Co. of California has established Spokane as a new divisional headquarters administering all of Washington east of the Cascades, northeastern Oregon, northern Idaho, Montana and a part of Wyoming.

Ralph Glass, division manager of dealer sales, has been transferred here from Oakland; O. F. Dorsett, merchandising manager of dealer sales, was brought in from San Diego; M. E. Nichols, division manager of district sales, and Don Craig, division operating manager, were transferred from Eugene, Ore.

A total of 15 persons have been added to the Spokane staff of UOCO as a result of the reorganization.

### L. A. Industrial District to Get Additional 330 Acres

LOS ANGELES—Purchase of 330 acres to be known as the La Mirada Area of the Central Manufacturing District has been announced by C. J. Doherty. Bounded by the Santa Fe railway, the Santa Ana Freeway and Valley View Ave., the area is unique for industrial development. This Southeast Los Angeles county addition will bring the Central Manufacturing District to a total of 3,500 acres.

### Commercial Forge, Alloy Co. Is New Oakland Firm

OAKLAND—Commercial Forge & Alloy Co. is a recently established business that combines facilities for general forging and blacksmithing with a complete machine shop for finishing forgings or for contract machine shop work.

Located at 1448 Third St., the concern is operated by James B. McVicar, owner of the forge shop, and Charles G. McArthur, who owns the machine shop. The firm welcomes bids for both types of work.

Stainless, carbon and alloy steel forgings of all descriptions are produced, either in small or quantity lots. Equipment includes a 1,500-lb. steam hammer and suitable tools for forgings up to 1,000 lb.

### Razor-Back



Shovels

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POWER TRANSMISSION  
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REPRESENTATIVES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES  
CULLMAN WHEEL COMPANY, 1337 ALGELD ST., CHICAGO 14, ILLINOIS

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## ASA Holds National Meeting in West for First Time

SAN FRANCISCO—First Western conference for the American Standards Association was held here Nov. 13-15, when the organization met for its Eighth National Conference, and 39th annual meeting, at the St. Francis Hotel. Some 600 members attended the 11 sessions which covered such fields as electronics, motion pictures, aircraft, automation, guided missiles, petroleum and nuclear energy.

Coordinating body and clearing house for the voluntary standards known as American Standards, ASA is a federation of 116 trade associations, technical societies, consumer groups and professional organizations, with about 2,300 individual companies in its membership.

T. G. McCuire, president, Industrial Indemnity Co., gave the welcoming address and H. Thomas Hallowell, Jr., president of ASA and of Standard Pressed Steel Co., was the keynote speaker on "Standards—Key to Progress and Profits."

Among significant sessions at the meeting were those concerned with control of exposure from ionizing radiation, standardization for technical communication, and industrial standards in defense.

### New Marine Equipment Firm Organized in Oregon

PORLAND—Marine Specialties of Oregon, Inc., is the name of a recently formed corporation here to handle sales and distribution in the Northwest for American Marc diesel engines, Aerquip marine hose and fittings, Capitol reverse and reduction gears, and American Bosch fuel pumps. Four salesmen are covering the Oregon, northern California and southern Washington areas.

Officials of the new company are Ed E. Mitchell, LeRoy Skousan and Gordon A. Kalk.

**HARGRAVE**



**CLAMPS**

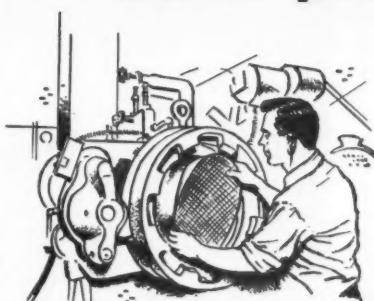
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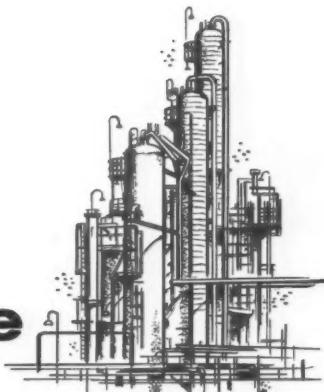
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WESTERN INDUSTRY—December 1957

## from processing rubber



## to refining gasoline



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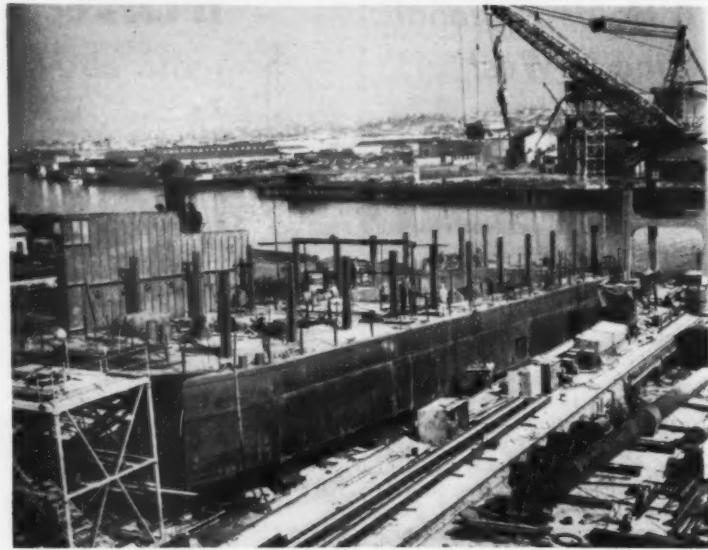
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**WEST BUILDING TREMENDOUS DREDGE**—One of the most powerful in the world, this dredge, launched Nov. 21, is being built by Pacific Coast Engineering Co., Alameda, Calif., for Utah Construction Co., San Francisco. Designed to move more than 40,000 cu. yd. per day, its powerplant has a 1,650 kw. output. Dimensions are 208 x 50 x 14 ft., and its operation in depths to 52 ft. is accomplished with a 325-ton digging ladder, 78 ft. long. The dredge pump with a 36-in. suction and a 30-in. discharge is powered by an 8,000 hp. main pump motor, largest ever built in the West. Completion is scheduled for February.

## Louis Allis Expands Plant to Make Larger Motors

LOS ANGELES—Production of large motors, up to 1,500 hp., will be under way soon by the Louis Allis Co., following completion of a \$2,500,000 expansion at its Milwaukee, Wis., plant, announces *Marcy Aynes*, Western regional manager. An open house, to display the 121,000-sq. ft. addition, was held recently.

Greatly improved material handling facilities for large motors, high bays plus overhead cranes, high speed automatic machine tools and an Electodata computer are included in the \$1,100,000 worth of new equipment at the facility, said Aynes.

Local headquarters for Allis, manufacturer of motors, gear motors and

adjustable speed drives, are at 3242 W. Eighth St. Other Western branches are maintained in Burlingame, Calif., Seattle, Portland, Denver, Salt Lake City and Phoenix.

## Olympic Plywood Conversion

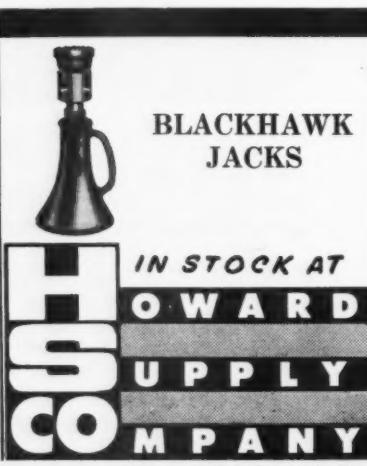
SHELTON, WASH.—A \$100,000 conversion project is changing the production of Simpson Logging Co.'s Olympic Plywood plant over to plastic over-lay panels. Installation of new equipment and alteration of existing facilities will enable the production of the new product which is expected to find better markets than standard plywood.

## Datamatic Establishes Western Regional Office

LOS ANGELES—Datamatic, a division of Minneapolis-Honeywell Regulator Co., has opened a Western regional office for the manufacture of large-scale electronic data-processing systems. *Samuel J. Weigand*, West Coast sales manager, will head up the new branch, located at 6620 Telegraph Road. A primary responsibility of the new office will be to help the County of Los Angeles prepare for installation of one of Datamatic's \$2,000,000 electronic "brains."

## New San Diego Firm

SAN DIEGO—A new electronics concern which manufactures and distributes magnetic amplifiers is San Diego Scientific, Inc. Headquartered at 3834 Midway Dr., it is headed by *David C. Kalb*.



... for more details, circle No. 92

## Hercules Increases Size of Planned Urea Plant

SAN FRANCISCO—A doubled capacity for production of urea is planned by Hercules Powder Co., at its Hercules, Calif., plant, the firm has announced. The expansion of a 10,000-ton-a-year plant now being built to permit a capacity of 20,000 tons yearly has been approved by Hercules directors in response to increased demands from agricultural and industrial users of urea.

Completion of the facility, to be built adjacent to Hercules' anhydrous ammonia facilities, is expected in the fall of 1958. The plant will use ammonia and carbon dioxide from the existing plant as raw materials, and its products will include UN32, a new urea nitrate solution with a high nitrogen content.

### Fornaciari Appointed to Handle Webster Products

LOS ANGELES—Appointment of the Fornaciari Co., 5350 E. Washington Blvd., as Southern California distributor for the oil hydraulic division of Webster Electric Co., Racine, Wis., was announced recently. The appointment, says Malcolm Cliff, Fornaciari hydraulic division manager, will provide service for the area on Webster's complete line of gear pumps, motors and controls, on out-of-stock, or factory-direct shipment basis. Combined with Fornaciari's design-engineering facilities, it will afford fast delivery of standard, or special-design, hydraulic systems.

### Billard Appointed Lamson Dealer in Los Angeles

LOS ANGELES—W. T. Billard, Inc., 743 E. Third St., has been appointed dealer for Lamson Mobilift industrial trucks, ac-

cording to an announcement by Lamson Mobilift Corp. of Portland.

The Billard company will handle sales of both stand-up and sit-down Mobilift trucks and attachments, and will maintain complete parts and service facilities. The firm also carries casters, electric trucks, dockboards and operates an equipment-rental service. W. T. Billard is president of the new dealership.

### Precision Tool Sales Makes Third Expansion Move

LOS ANGELES—Making its third major expansion move in five years, Precision Tool Sales recently occupied new quarters at 6812 S. Western Ave. A supplier of tool engineering and quality control products, the firm marked its move with an open house and new products show in the 10,000-sq. ft., two-story facility.

A modern tool design proposal area; warehouse stocks of tooling components, stock gage components, and shop facilities for their assembly and alteration; and a complete woodworking shop for custom fabrication are included in the new plant, which is double the size of the former site.

### Kaiser Industries Buys Aircraft-Electronics Unit

OAKLAND, CALIF.—Kaiser Aircraft & Electronics Corp., subsidiary of Willys Motors, Inc., has been purchased by Kaiser Industries Corp. and will now be known as Kaiser Aircraft & Electronics division. The new unit conducts machining and aircraft sub-assembly operations in Richmond and San Leandro, Calif., operates electronics laboratories and other facilities in Palo Alto, Calif., and is a major sub-contractor to the airframe industry. Management and all operations of the division will remain unchanged.

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... for more details, circle No. 93 on Reader Service Postcard

## Ruby Lighting Corp. Moves Into New Facilities

LOS ANGELES—A major expansion move into new manufacturing facilities has been completed by the Ruby Lighting Corporation, manufacturer of industrial fluorescent fixtures.

A subsidiary of Eko Products Co. of Chicago, Ruby is now producing its complete line in Eko's Whittier, Calif., plant where 150,000 sq. ft. are now in use for production.

Among new equipment installed at Whittier are a six-stage Bonderizing system that prepares metal for painting and makes it corrosion-resistant, a double electrostatic paint spray, overhead conveyors and motorized belt assembly lines, and a new photometric testing laboratory.

## Salem Metal Firm Buys Electro-Watt Subsidiary

SALEM, ORE.—Neilson Metal Industries has purchased the physical assets of Electro-Watt Industries, Salem subsidiary of Electro-Watt, Inc., Seattle, according to Electro-Watt president Robert D. Watt. Electro-Watt acquired the Salem plant in 1945.

Electro-Watt's Seattle-plant production and distribution of industrial and commercial gas and oil burners will not be affected by the change.

## Gotta Line on Litterbaskets?

Or some tips on trash can design?

That's what Los Angeles is looking for, particularly the city's Clean Community Crusade, and Ben R. Paris, director of the street maintenance bureau.

They're thinking in terms of about 10,000 such items to lighten their litter-bug problem.

As a result the city is inviting metal and plastic industries and manufacturers to submit materials and suggestions for street trash receptacles, preliminary to joint program with Los Angeles Beautiful (Chamber of Commerce-sponsored) to provide an adequate number of the best litter containers.

If you wish to submit material, send it to: Ben R. Paris, Director, Bureau of Street Maintenance, City Hall, Los Angeles.

## Beckman Helipot Occupies New \$3,000,000 Facility

NEWPORT BEACH, CALIF.—Now in operation, following recent dedication ceremonies, is the \$3,000,000 facility of Helipot Division, Beckman Instruments, Inc., built on a 15-acre site overlooking Balboa-Newport Bay.

The 156,000-sq. ft. building houses manufacturing and administrative functions for production of Beckman Helipot's principal product, the helical potentiometer, which has wide application in electronic instrumentation, supersonic aircraft, radar and guided missiles.

D. C. Duncan is division manager, at the installation, which has 1,200 employees.

## Cascade Plywood Buys Timber, Mill of E. K. Wood Lumber Co.

PORTLAND—The E. K. Wood Lumber Co. sawmill at Reedsport, Ore., and some 300,000,000 fbm. of timber has been purchased by Cascade Plywood Corp., whose main plant is at Lebanon, Ore. The Reedsport mill has been closed since mid-October when the company's stockholders voted to discontinue operations and liquidate the firm's assets. The timber holdings are located in Coos and Douglas counties. Cascade President Charles W. Fox said his company is considering construction of a green veneer plant in Reedsport to make veneer from local timber for shipment to the Lebanon plywood plant.

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WESTERN INDUSTRY—December 1957

## Eutectic Welding Opens Western Center

LOS ANGELES—Pacific division of Eutectic Welding Alloys Co., Inc., has opened a warehouse-service center at 5348 Jillson St., to provide complete service, testing, warehousing and shipping space for industry in the Los Angeles area. One of eight such facilities in the country, including those at Phoenix, Ariz., and Berkeley, Calif., the center will be operated by R. C. Wilcox, who will coordinate the free industrial shop consultation-demonstration of Eutectic district engineers.

## Belt Is Smoot-Holman Rep

DENVER—C. D. Belt & Co. has been named sales representative for Smoot-Holman Co., Inglewood, Calif., manufacturer of lighting fixtures. Area covered by the representative firm is Colorado, west Texas and New Mexico. C. D. Belt, who heads the company, has been selling lighting equipment in the Rocky Mountain area for nearly 25 years.

## Firth Sintering Plant Schedules December Start-Up

LOS ANGELES—Starting production this month is the tungsten carbide sintering facility constructed by Firth Sterling, Inc., one of the major sintering plants in the West. Fourth such plant to be established by the McKeesport, Pa., firm, it will produce carbide cutting tool tips and blanks, and carbide wear parts. Wade H. Davis is district manager for this Western operation.

## S & S Machinery Branch

LOS ANGELES—A Western division of S & S Machinery Co., of Brooklyn, N. Y., was opened recently at 6945 Bandini Blvd. S & S is one of the world's largest machine tool companies. Charles Schaefer is in charge of the new division.

## McDermid Western Division

TORRANCE, CALIF.—McDermid Pacific, Inc., is a newly opened Western division of McDermid Inc., Waterbury, Conn. manufacturer of metal cleansing, plating and finishing chemicals. Temporary headquarters here are at 18802 Foothill, with Claude E. Weekly in charge.

## Distributor for Zallea Line

LOS ANGELES—Bogart-Bullock Co. has been named sales representative by Zallea Brothers for their line of expansion joints and flexible connectors. The Los Angeles firm, with offices at 6010 S. Normandie Ave., will cover the Southern California and Arizona area for the Wilmington, Del., manufacturer.

## \*Schramm Appoints Hamilton

PORTLAND—The Portland distributorship for Schramm, Inc., West Chester, Pa., has been awarded to Hamilton Engine Sales, Inc., 2580 N.W. Upshur St., according to recent announcement by the Schramm company.

The Schramm line, consisting of portable, industrial and high pressure air compressors; air tools; Pneumatractors and Rotadrills, will be handled by Hamilton Engine throughout Oregon and the Columbia River counties of Washington. Twenty-four-hour parts service is maintained; rental service as well as sales, and a modern repair shop are available.

## Semon Co. to Handle Radicon Line in Arizona

PHOENIX—Semon Bearing & Supply Co. has been named distributor in Arizona for the Radicon line of reducers and allied equipment, manufactured by David Brown, Inc., of San Leandro, Calif. Two other Semon firms, in Flagstaff and Glendale, Ariz., will also handle the reducers.

## Moltrup Names Pacific Tube

LOS ANGELES—Pacific Tube Co., 5710 Smithway St., has been named sales representative for Moltrup Steel Products, Beaver Falls, Pa., manufacturer of close tolerance cold finished bar stock, steel engraving plates, machine keys, etc. Pacific Tube, which makes cold-drawn steel and bar stock, will represent Moltrup in seven Western states, Texas and Oklahoma.

## Sales Agents for New Lime Co. Announced in Portland

PORLAND—The Great Western Chemical Co. here has been announced as exclusive sales agents for products of the new \$2,000,000 plant of Chemical Lime Co. at Baker, Ore. The recently-completed 70,000-ton-capacity plant will produce chemical lime for use by manufacturers of steel, paper, glass and other products, as well as agricultural hydrated lime.

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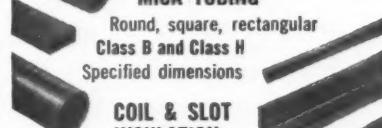
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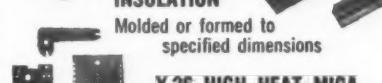
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99

## Torrington Doubles Size of Plant and Payroll

VAN NUYS, CALIF.—Torrington Manufacturing Co. has doubled the size of its manufacturing facility here, at the same time doubling its employees, with the recent opening of a 50,000-sq. ft. plant. Fans and other air impellers, chiefly for the air conditioning industry, are made by the firm, which has headquarters in Torrington, Conn. Cost of the new facility is about \$1,000,000, and there are 250 employees.

## Standard Oil Contracts For Oil-Drilling Platform

SAN FRANCISCO—Standard Oil Co. of California, Western Operations, Inc., has awarded to National Steel and Shipbuilding Co. of San Diego a contract for fabrication of the state's first offshore oil drilling platform. The contract totals some \$750,000 for the basic platform only. Scheduled for completion next May, the platform will be towed to the Standard-Humble drilling site near Santa Barbara. Total cost of the installation is estimated at over \$2,000,000.

## Pyromet Co. To Enlarge South San Francisco Facility

SOUTH SAN FRANCISCO—Pyromet Co., brazing and heat treating firm, is enlarging its facilities at 429 S. Canal St., with construction of a 7,000-sq. ft.



building adjacent to its present quarters.

Additional hydrogen brazing units, capable of handling larger parts than at present, will be housed in the new building. Future plans call for a vacuum heat treating and brazing furnace and an aluminum dip brazing facility. Pyromet's activities include hardening of alloy and tool steels in controlled atmospheres, nitriding and special metallurgical processes for electronic and missile industries.

A. C. Fortlage, metallurgist, formerly with General Metals Corp., has joined the firm as production engineer.

## Stratham Instruments Plans New Facility in Santa Monica

LOS ANGELES—Stratham Instruments, Inc., formerly known as Stratham Laboratories, Inc., has plans under way for a new plant in which it will consolidate operations presently in five buildings. Site of the new facility, scheduled to cost about \$1,000,000, is on 23 acres of land north of Santa Monica. Stratham produces scientific instruments, aircraft and medical. Louis D. Stratham is president.

# WESTERNERS AT WORK . . .

### Hyster Co.

... has appointed two new executives in its Portland plant: Paul Fischer, formerly chief



P. Fischer



F. Brainard

named to the vice presidency. Johnson has been with the Portland company for 15 years, its general manager since 1955. Wise has been assistant sales manager for the past two years.

### Consolidated Freightways

... moves up Austin Schnasse to fill the post of general manager of Consolidated Warehouse, a division of the freight company with facilities in Portland, Seattle and Spokane. Schnasse has been manager of the Portland warehouse since 1954. He will be headquartered in San Francisco and R. L. Guthrie will replace him in the Portland job. Guthrie was formerly the general warehouse foreman.

### Omark Industries, Inc.

... has appointed Harold G. Cutright as general sales manager, according to an announcement by John D. Gray, president of the Portland firm. Cutright formerly served as director of sales for the general products group of American Machine & Foundry.

### Carlton Products Corp.

... assigns Richard G. Kress as general manager of the Western division. Carlton Products, manufacturer of plastic pipe, recently acquired facilities in the Los Angeles area. Kress will also direct activities at the Carlton plant in Klamath Falls, Ore.

### Griffith Rubber Mills

... announces the appointment of Norman J. Johnson as its new president, filling the vacancy left by the death of Zina A. Wise in September. Zina A. Wise, Jr., has been

methods engineer, is the new plant manager, and Fay Brainard, special engineering assistant to management, has been named chief methods engineer to succeed Fischer.

### Hughes Aircraft Co.

... appoints George W. Sinclair as plant manager of the Tucson, Ariz., facility. He succeeds Roy E. Wendahl who is now vice president of sales at the Culver City, Calif., headquarters. John W. Black, associate director of the Hughes guided missile laboratories at Culver City, was named assistant plant manager at Tucson.

### Mail-Well Envelope Co.

... names L. W. "Bill" Lord new district sales manager for the Spokane district. He has been with the company 12 years in Portland as city sales and sales promotion manager.

### Electric Distributing, Inc.

... directors have approved a reorganization in Portland, by which A. M. Cronin, III, is president and general manager; A. M. Cronin, Sr., chairman of the board and treasurer; Mrs. A. M. Cronin, Jr., vice president, and George L. Curry, vice president in charge of sales.

### Bethlehem Pacific

... designates W. J. Bolton as assistant general manager of its expanding Seattle steel plant. Bolton joined Bethlehem Pacific in 1948 and later became superintendent of rolling mills for the Los Angeles plant.

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## Fairbanks, Morse & Co.



J. G. Graham  
1946, at one time serving as Eastern manager of that division.

## Ducommun Metals & Supply Co.

announces appointment of James J. Shelton to the position of general manager of sales in its Los Angeles division. He was previously manager of sales planning.

## Square D Company

names Daniel H. Miller manager of the Western division, with headquarters in Los Angeles, succeeding Laurence G. Maechtlen, now a first vice president in Square D's Detroit executive offices. Associated with the firm since 1935, Miller has been Northwestern regional manager at the Seattle, Wash., plant for five years.

## Binks Manufacturing Co.

names Ralph Fifield manager of its Los Angeles branch, with territory that includes Southern California, Arizona and southern Nevada. Becoming a sales engineer in Binks' San Francisco office in 1937, Fifield has been in Los Angeles since 1946 as field representative responsible for sales contact and development in that area.

## Eason Grinding Co.

selects E. B. "Bud" Jones, Jr., as its new sales manager for the firm, one of the oldest grinding plants in Southern California. Jones has been in the grinding industry for about eighteen years.

## Pacific Intermountain Express

appoints F. E. Devlin, as district manager at Seattle. Devlin joined the firm's Chicago staff in 1947, later worked in Salt Lake City and in Oakland before his appointment last year as branch manager at the firm's Oakland Bay Area terminal in Emeryville, Calif.

## Thor Power Tool Co.

transfers Alfred W. Escoffier from San Francisco, where he has been a service engineer since 1955, to Seattle where he will be branch manager, succeeding R. J. Horrocks. Horrocks moves to the Thor Denver branch to cover industrial sales in that area. Escoffier will be headquartered at Seattle branch's new location, 414 Eighth Ave. N., where Thor operations were moved recently to provide more space for repair and service facilities.

## Northrop Aircraft, Inc.

Northrop Division, names Arch Wallen as factory manager. Wallen will direct the production team manufacturing the Snark SM-62, an intercontinental guided missile, and other Northrop products. Wallen formerly was vice president of Century Engineers, Inc., and Royal Jet, Inc., of Burbank, Calif.

# CLASSIFIED SECTION

Space is sold as advertisers' inches. All advertisements in this section are  $\frac{1}{2}$  inch short of contracted space to allow for borders and composition. Rates are \$12.00 a column inch. Copy should be sent in by the 25th of preceding month if proofs are required; by the 28th if no proofs are required.

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## Food Machinery & Chemical Corp., Peerless Pump Division

has created a new post, that of Los Angeles works manager, naming John F. Van Dam to fill it. Moving up from production



J. F. Van Dam

F. W. Widener

manager, Van Dam now will supervise works manufacturing, accounting, industrial relations and all engineering activity. He has been with the Peerless division since 1939, after four years in FMC's John Bean division. Los Angeles factory manager is Floyd W. Widener, who was recently assigned also to serve in an advisory capacity to Peerless division management on production matters.

## Petley, Incorporated

names Fred Moor sales engineer serving San Francisco and Marin County areas. He was formerly a sales representative for W. R. Ames Co. of San Francisco. Petley

is exclusive distributor for Republic Steel's Berger division products, including lockers, shelving and shop equipment, and for its Pressed Steel division, which manufactures pallets, skids and similar material handling equipment.

## Consolidated Electrodynamics Corp.

has added Joseph S. Jonkey to its staff as production manager of the Glendale division. Associated with William R. Whitaker Co. for nine years and recent manager of product engineering there, Jonkey formerly owned Excell Tool & Engineering Co. of Glendale. He also was employed by Adel Precision, Lockheed Aircraft and Electrical Products Corp.

## Fibreboard Paper Products

appoints Ben A. Wilson director of purchases and Paul E. Fischer to succeed him as manager of the manufacturing-building materials division. Wilson previously was manager of Fibreboard's plants at Redwood City and Emeryville, Calif. Fischer was formerly with Certain-Teed Products Corp. as vice president in charge of manufacturing.

## Recold Corp. of Los Angeles

announces the appointment of William M. Semple to the newly created post of works manager. The new Recold works manager was formerly manufacturing director for Beckman Helipot Corp. of Newport Beach, Calif.

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in the December 1957  
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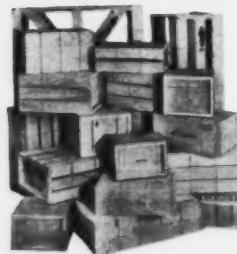


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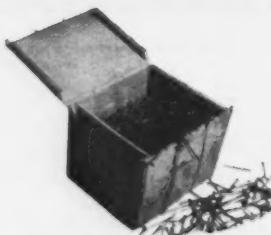


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